HYGEIA

The HEALTH Magazine

Published by the AMERICAN MEDICAL ASSOCIATION

$2.50 a year 25 cents a copy

The New Generation

Is It Marching or Drifting?

These Teeth of Mine

Better Health Through Better Dental Health

Sex Education for Young Children

How, What and When to Tell the Inquiring Child

Why Condition the Air?

An Answer — An Evaluation — A Prediction

Preventing Heart Attacks

Learning to Live with the Heart You Have

— also —

The Making and Unmaking of a Quack — Overcoming Worry — Occupational Diseases of Musicians — Some Obesity "Cures" and "Treatments" — The Eye Book — Symposium on Health and Disease — Committee Acceptance of Cheese — Two Common Intestinal Worms

JANUARY 1935

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HEALTH-PROMOTING VITAMINS A AND D

of cod liver oil are concentrated in these candy-like tablets

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Science now gives you a pleasant, most convenient way of feeding your children the precious vitamins A and D of cod liver oil—without the nauseating, fatty acids which are so often upsetting. It gives you these valuable vitamins in candy-like form—White's Cod Liver Oil Concentrate Tablets.

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You'll find the tablets well suited to infant feeding. They dissolve quickly and completely, when crushed and mixed with orange juice, milk, or formula.

And grown-ups find White's Cod Liver Oil Concentrate Tablets easy to carry, easy to take—no bulk, no mess.

* A cod liver oil containing not less than 3,138 vitamin A units (U. S. P. X, Rev. 1934) and not less than 314 vitamin D units (U. S. P. X, Rev. 1934) per teaspoonful.

White's COD LIVER OIL CONCENTRATE TABLETS

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Dept. of Public Health
Direct

NUTRITION AND HUMAN WELFARE

By SIR FREDERICK GOWLAND HOPKINS, PRES. ROYAL SOCIETY

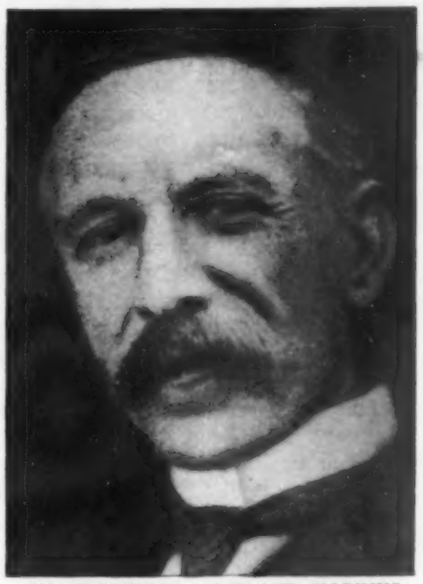
WHILE the health, the capacity, and the effective activities, alike of a race and of an individual, are primarily determined by inherited factors, all are secondarily influenced by the environment in which the race or individual has developed and exists. * * * It is sure that there is always a relation between the qualities of its basal foodstuffs and the effective activities of a race, a circumstance which it is of sociological and ethnological importance to recognize. During the whole of history the needs of nutrition and the kind and amount of foods geographically available have played a great part in determining the destiny of races. Inadequacy in the supply has in some cases stunted innate capacities and led to the degeneration of a race; more generally in the past it has stimulated effort and led to migrations and wars of aggression.

It is often felt that concerning matters so urgent as its own nutrition, humanity, with all the experience of the ages behind it, can have little to learn from modern science, yet, as in the case of so many other established traditions, an assumption of this kind is wholly unjustified. Tradition accumulates prejudices quite as often as truths, and the former are apt to be more potent in their influence. With sufficient space it would be easy to show that faulty nutrition has played a large part in inhibiting human progress, and even to show that few races have at any time been ideally nourished. One need not go far back in history to illustrate this. In the most prosperous days of the Victorian era the methods of infant feeding in this country were exceedingly faulty, and had dire results. When the food supplies of existing native races are studied they are often found to be so deficient in certain essentials as to limit the productive capacity of the races in question.

That scientific research during recent years has greatly emphasized the importance of right nutrition as a factor in human welfare is very sure. Anyone indeed who troubles to compare even the recent past with the present will realize that research has wholly changed the outlook in the domain of nutrition. Only a couple of generations ago it was supposed that a community in which the crude appetite of all individuals is duly satisfied, and obvious starvation avoided, is a community adequately nourished. Ill-health and inadequate performance in such a community must, it was assumed, be due to causes in which nutrition has no part. We now know that the satisfaction of appetites by mere bulk consumption is no final proof that a food supply is adequate, and this is as true of the animals which we breed for our uses as it is of ourselves. Quality in food is at least as important as quantity; details are of the utmost significance; the absence of factors which add almost nothing to the bulk of a dietary may make the whole entirely inadequate. We know now that conditions recognized as actual diseases develop because the supply of some minute nutritional necessity has failed, while, short of obvious disease, ill-health may depend upon a lesser degree of such a deficiency. Lack of substances of which the necessary amount is equally small may be responsible for failure of proper growth in the young, and for loss of fertility in the adult. Recent observations seem even to have shown that fundamental instincts, such as maternal care for the progeny, may, in animals at least, be affected by the absence of a factor from the diet! In all individuals such a lack may greatly increase the liability to infection by bacteria and other parasites. Facts such as these are already established. There are countless others to be discovered.

The earlier scientific studies which dealt with accurate measurements of the energy value of human dietaries or animal rations provided data of fundamental and permanent value, for once a ration has been properly balanced in detail its fuel value becomes a measure of its adequacy. Studies of the kind must and will continue; but the conditions in which such determinations have hitherto been made were not such as to reveal the great importance of those minor but essential factors of which the lack has such profound effects. The appraisement of the importance of each and all of these factors (for they are certainly many) has called for a different type of experiment involving a technique which is now rapidly growing in accuracy and reliability.

We now know as a result of properly controlled observations and experiments that the animal body may suffer, on the lines already mentioned, from deficiencies alike in the supply of minerals and in the supply of subtle organic factors.



SIR FREDERICK GOWLAND HOPKINS

Professor of Biochemistry at the University of Cambridge and Trinity College, Sir Frederick was recently awarded the Nobel Prize for his pioneer recognition of the existence and significance of vitamins in nutrition. So numerous and so outstanding have been Sir Frederick's contributions to the science of nutrition that *The Scientific Monthly* feels that "the award might have been made to him on any one of a great variety of bases."

An adequate provision, for instance, of lime, magnesium and iron, to think only of familiar substances, is as essential as any other aspects of nutrition, and what is significant is that human dietaries and no less animal rations, pastures, and crops grown for feeding stock, may be deficient in these fundamentals, and so lead to untoward results which have hitherto escaped proper evalution. We are learning, moreover, of unexpected mineral needs; even metals such as copper and manganese are apparently essential to the animal body, though, of course, in very small amounts. Of the substances which we have come to call vitamins there are certainly many, and a supply of each one is necessary because each exercises its own quite specific functions in the body. Modern studies are making it clear indeed that nutritional needs are in reality very complex; so complex that the results of these studies sometimes awaken scepticism among those who have not appraised the evidence. They are conclusive, however, to those who have seen them at first-hand. To keep abreast with current gains in knowledge of the kind cannot but be profitable to a wide public apart from those who are directly concerned with research.—*Extract from Foreword to first issue of Nutrition Abstracts and Reviews, October, 1931.*

The Progress of Nutrition As a Science

Editorial, Journal of the American Medical Association, January 16th, 1931.

"The advance in our knowledge of nutrition represents one of the most significant factors for the welfare of mankind that have developed in recent years.... Most people take it for granted that the type of human being that constitutes what is called a normal man today is the best type of human being that can be produced, notwithstanding the fact that careful breeding and scientific housing and feeding of animals enable the breeder to develop superlative stock.... When the majority of human beings have sufficient knowledge to appreciate the true import of the many factors already established as of importance in nutrition, much good will have been accomplished for mankind in general."

BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

This space is devoted to the interest of better babies by
MEAD JOHNSON & COMPANY, *Evansville, Ind.*

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AMONG HYGEIA ADVERTISERS

When you were a youngster, did you ever earn a dime by sitting still for an hour? Pretty hard way to earn money, wasn't it? Yes, sitting still is about the most irksome punishment that can be meted out to an alert, wideawake child. However, for some strange reason, when a youngster starts to school, we frequently lose sight of his natural aversion—or, perhaps, I should say, his physical inability to sit still for a prolonged period of time. Add to that an improperly designed or a poorly fitted seat and you have a good start toward a fidgety pupil. A considerable amount of work has been done in the attempt to develop school seats that would be anatomically correct. Some of this has failed because seats were designed on the principle that groups of children could be "average." The American Seating Company has been carrying on widespread scientific research to determine the most important principles to build into school seats for schoolroom use. They have found that it is not wise to try to build a straightjacket or stocks type of seat and to attempt to force the child to sit in one position, because, no matter how anatomically correct that position may be, it will after a while become tiresome. One of the highly important features in their construction is adjustability to the individual pupil's needs. A glance at the illustration of one of the models on page 85, this issue of HYGEIA, will show some of the practical details of this principle. Another important point to observe is the slope of the desk. To prove to yourself how important this is from the standpoint of visibility and comfortable posture lay a sheet of paper flat on the table before you and attempt to read it, then hold it at a slope, and note the difference. As a parent or teacher, you are vitally interested in the matter of proper seating for school children, and a reading of the posture booklets sent out by the American Seating Company will be very illuminating and thought-provoking. These booklets may be had without charge.

A few years ago, Chicago was considerably shocked over several deaths which occurred under mysterious circumstances, but were subsequently shown to have been caused by the inhalation of gas escaping from a refrigerating system. Since that time, great strides have been taken toward improving or altering refrigerants so as to make such tragedies impossible or, at least, unlikely. At the present time, some highly poisonous gases are used in refrigerators, but I believe that, as a general rule, they have a strong, pungent odor, and their presence in a room could be readily detected. However, it seems infinitely better to employ a gas that is free from health hazards under all practical conditions. To find such a gas was the aim of the General Household Utilities Company when they started to develop the Grunow Refrigerator. Carrene, a purified form of methylene chloride, was the answer. It can actually be carried around in open containers with no danger of saturating the atmosphere with highly poisonous gases. In demonstrations, people see Carrene right before their eyes, smell it and hold it in their hands. Whether or not you are thinking of buying a refrigerator, you will be better informed by getting the facts about Carrene as a refrigerant. Reply to the advertisement on page 7, and ask for details.

A unique and rather impelling idea for starting the New Year is suggested in the advertisement of the Metropolitan Life Insurance Company on page 84. "Come along. You and I are going to inspect this house from top to bottom," says the wife in the picture to the husband. Maybe you have never thought of the importance of your house to the health of yourself and your family. It is only natural to overlook the things that are the closest to us. But the heating, the plumbing, the wiring, the ventilation, the food protection, lighting, etc., can have a great deal to do with your health and comfort, and you can have an interesting time some evening making an actual, careful check of such items in your own home. Why not try it?

Here is good news for teachers. The Bureau of Coffee Information has just completed a new coffee chart. This is a hemisphere map of the world, 22x32, showing the boundaries of the different countries, and, in connection therewith, the story of coffee in various parts of the world. The Bureau also has a nicely illustrated booklet written as a trip through the coffee-growing countries of North America. Both the map and a sufficient number of copies of the booklet for classroom use will be sent to any teacher without charge. The only request is that the coupon attached to the advertisement on page 89 be filled out completely.

Another very helpful booklet for home and classroom study is offered by the Products Control Department of General Mills, Incorporated. It stresses the importance of sound diet, explains what makes up such a diet, and gives specific examples. Its aim is to tell in simple language what every school student should know about food. Parents or teachers may obtain copy by returning coupon on inside back cover page. Your request incurs no obligation whatsoever.

A big bargain in toothbrushes. Imagine, six toothbrushes for 60c! That is the offer made in the advertisement of the Takamine Corporation on page 92. The famous Takamine brush has been widely used, and is of the type recommended by Dr. W. M. Gardner in a recent HYGEIA article. It is rather different than the toothbrush you have been accustomed to, but you will enjoy its unusual efficiency and economy. Excellent also to keep on hand for guests or for traveling, and especially useful in oral hygiene work in schools. Order direct from the advertisement.

An all-day rouge that gives a natural, fresh, appearance, and is waterproof and transparent, has been developed by the Charm and Fashion Studios. If you are not completely satisfied with the kind of rouge you are now using, take advantage of the special offer made on Romance Rouge, and enjoy its economy as well as its ease of application and its fine, natural appearance. See advertisement on page 94.

Charles S. Mohler
ADVERTISING EDITOR

HYGEIA•

JANUARY 1935

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Volume 13
Number 1

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a radio address, given by Dr. Louis Faugeres Bishop, Jr., under the auspices of the Medical Information Bureau, New York Academy of Medicine.

SEX EDUCATION FOR YOUNG CHILDREN.....Page 16

an article in which Mary Price Roberts, Ph.D., visiting teacher, discusses the folly of fables and the wisdom of truth. Dr. Roberts was formerly assistant in parent education, Iowa Child Welfare Research Station, Iowa State University.

THE MIRACLE.....Page 20

a delightfully whimsical bit of fiction by Berton Braley, author, poet and humorist, whose "Lays for Loving Parents" appeared last year in Hygeia.

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a question answered by Dr. J. Arthur Myers, professor of medicine, preventive medicine and public health, University of Minnesota Medical School and Graduate School of Medicine.

THESE TEETH OF MINE.....Page 26

a new series based on the oft-repeated questions of dental patients. The author, David W. McLean, D.D.S., is a writer and lecturer on dental subjects.

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and the influences that mold it, discussed by Dr. Wingate M. Johnson, frequent contributor to Hygeia, who champions the cause of modern youth.

THE MAKING AND UNMAKING OF A QUACK. II.....Page 34

in which a strong indictment is brought against the "patent medicine" mail order diagnosis racket by Jean Broderick, a former but repentant quack. Part I of this article appeared in The December 1934 issue.

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in which the medical point of view is presented by Dr. Herbert B. Wilcox, professor of diseases of children, Columbia University College of Physicians and Surgeons, and the structural point of view by Miriam T. Sweeny, graduate of the department of hygiene, Wellesley College.

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explained by Dr. Oscar T. Schultz, author of previous Hygeia articles on allied subjects: "Our Antiquated Coroner System" and "Tales That Dead Men Tell."

OVERCOMING WORRY.....Page 43

which offers positive measures of habit control. Margaret Wylie, who tells how, is professor of child development and parent education, Cornell University.

OCCUPATIONAL DISEASES OF MUSICIANS. I.....Page 46

a consideration of the psychic ailments that batten on musicians. This is the first of two articles by Robert Pollak, music critic.

SOME OBESITY "CURES" AND "TREATMENTS".....Page 50

an article in which Dr. Arthur J. Cramp, director of the bureau of investigation of the American Medical Association, exposes the fallacies of some fantastic claims.

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TWO COMMON INTESTINAL WORMS.....Page 60

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DISEASES OF THE EYES: GENERAL CONSIDERATIONS.....Page 64

the seventh chapter in Dr. Hyman Cohen's series, "The Eye Book." Dr. Cohen is the author of many works on medical and nonmedical subjects.

TUNA FISH.....Page 67

an article by Miss E. M. Geraghty, dietitian, food consultant and author of books and articles on food subjects.

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and another adventure on which he enters under the guiding hand of Nellie G. Herriman, author of many charming stories for children.

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New Year's Resolutions

THE COMING of a new year means for many persons "taking stock," or making an inventory, as to the conduct of their lives. Sometimes, after suitable reflection, we develop a new program of life. There can be no real happiness without healthful living. There can be no healthful living without knowledge of the nature of the human body and of its disorders. In perfect health, all the organs and tissues of the body work efficiently and, for that very reason, without attracting special attention to themselves. In the absence of health, the tissues and organs make themselves known by pains, by disorders of function and by alterations in their appearance. The sensible man takes account of the earliest warnings of disorders and makes suitable corrections. Hence one of the first resolutions for the New Year is a resolution to observe the state of the body and, if necessary, to have a complete physical examination, thereafter controlling such disorders and disturbances as may be controlled by the methods that have been made available by modern medical science.

THE HYGIENIC life is simple; it includes sufficient outdoor air, wholesome food in proper amounts, adequate quantities of rest and sleep, and enough exercise to give poise, power and proper development.

AN IMPORTANT resolution for the New Year involves the willingness for each of us to protect the health of others. Communicable diseases still carry away many human beings whose lives would never have been threatened had others realized their responsibility to mankind as a whole. In addition to what a community itself does in the way of sanitation, quarantine of those already infected, the provision of pure water, pure milk and pure food, and the proper disposal of sewage, every one of us can increase his own powers to resist diseases by living a hygienic life. We can avoid the exposure of others to diseases by practicing voluntary isolation for our own infectious conditions and those of our families. A person with a severe cold should not mingle with crowds. Children who have infectious diseases should be kept at

EDITORIAL

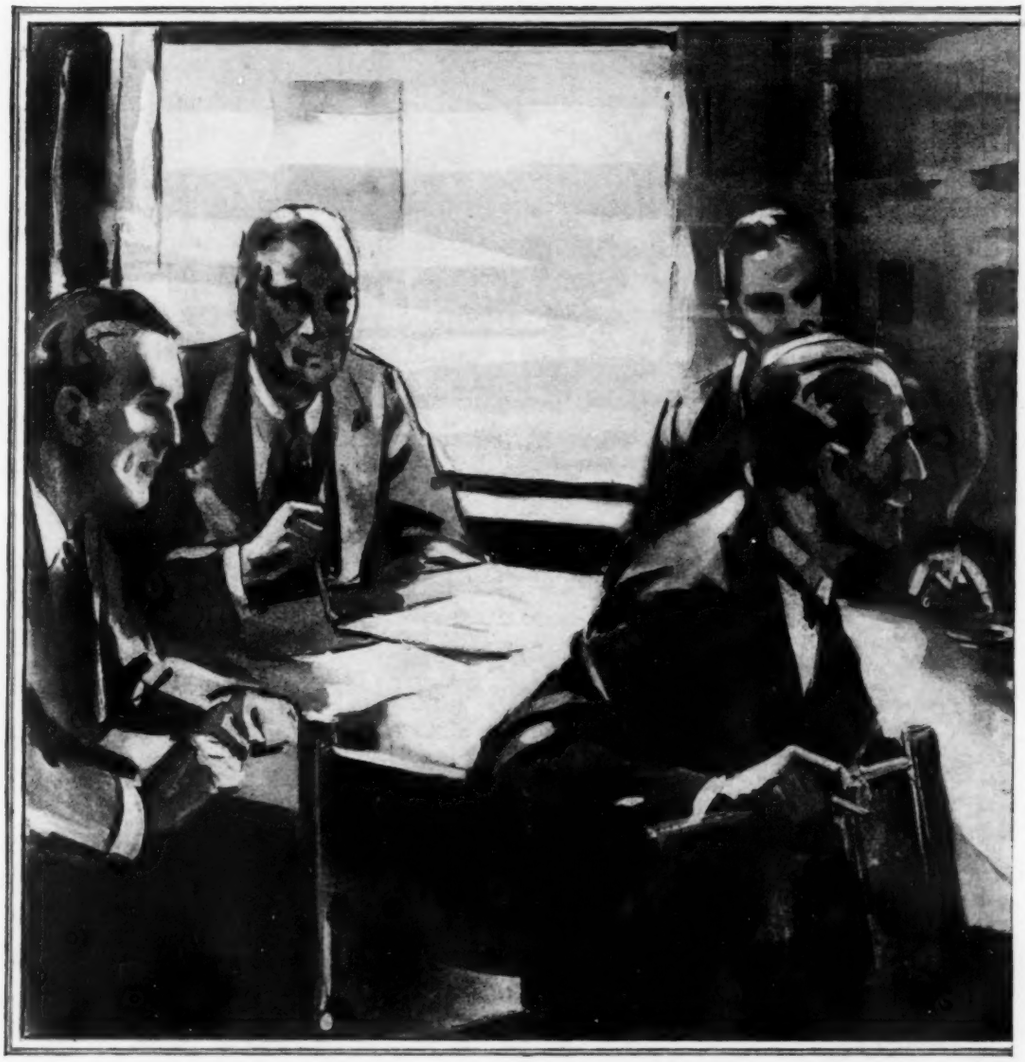
home until the doctor is satisfied that they are no longer capable of spreading the disease to other children. More general attention to these simple procedures would result in the lowering of infectious disease rates.

IN THESE days of stress and storm, mental health is a special problem. If there is any suggestion that might be given generally to all mankind at this time, it is to practice calm. When human beings are fatigued and worn with the stress of living, they easily lose their tempers, and their emotions hang by a thread. Under such circumstances our adjustments to each other and to society become especially difficult. Man has a will-power which should enable him to control to some extent his responses to external stimuli. The proper use of a nervous system demands self control. It is well to know that every emotion may affect the physical state of the body as well as the mind and that a repeated irritation of the nervous system will tend to a permanent disorder just as definitely as any repeated insult to the physical body. A reasoning human being is careful in his reactions; he avoids hasty judgments; he avoids action on the basis of emotions and instincts, and determines his conduct after thoughtful consideration. This does not mean that we should follow the easiest way and drift with the multitude rather than react for ourselves; it means that we should act only after we understand what we are doing and why.

FOR CENTURIES the family doctor has been the adviser and counselor of mankind, not only in sickness but also in health, not only for disorders of the physical body but also for all problems of life that may be related to health. With the coming of the machine age and with the rise of specialization, there has been some tendency for people to drift away from the family doctor. Possibly many of the mental and physical disturbances of the times are related to this failure to utilize the family doctor as a sturdy prop on which to lean in times of doubt and distress. Let us return to the conception of the family doctor that prevailed a few generations back!

FOR THE New Year, HYGEIA wishes each of its readers health in abundance and all the happiness that comes from a well functioning body and a contented mind.

Preventing Heart Attacks



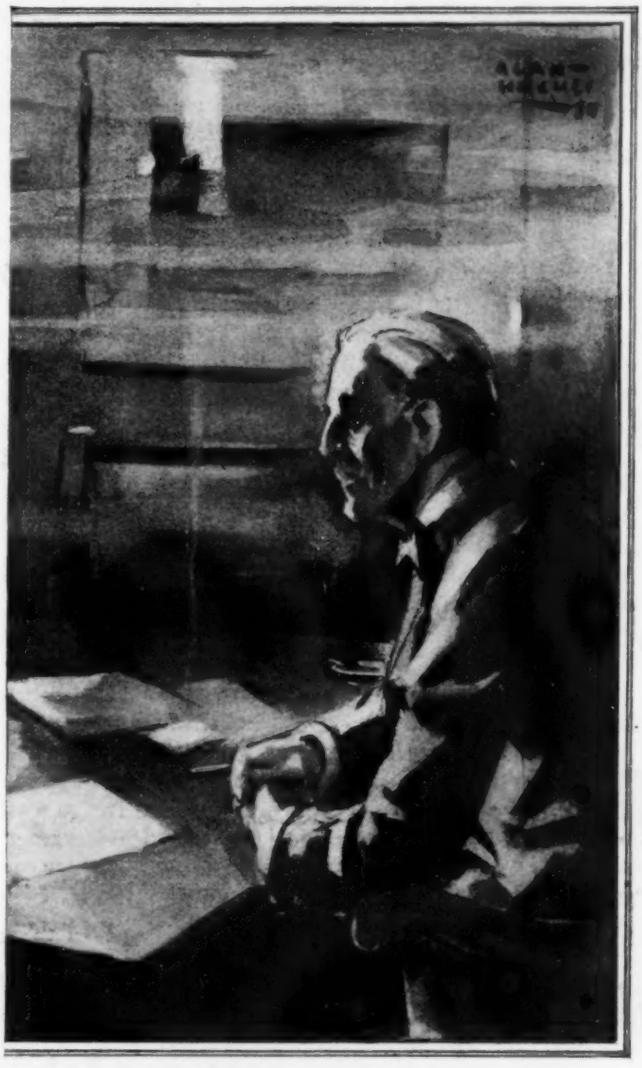
OFTEN IN BUSINESS CONFERENCES, CROWDED, FILLED WITH CIGAR SMOKE, BILL FELT THIS

THE ERRONEOUS conception that heart disease is an absolutely fatal disease must be dispelled, and persons with weak hearts must be taught to live with the hearts they have. A popular medical writer has recently ventured to hope that degenerative diseases of the heart and blood vessels will eventually be considered as amenable to treatment as is tuberculosis.

A certain friend of mine, now in the early forties, is a valuable person to the community, as she employs a large staff in her business. About twenty years ago, she was suddenly stricken with tuberculosis. Undaunted, she set out for sanatorium treatment in the Adirondacks, and in two years she was cured and had had a good time while regaining her health. Today she has been told by the medical adviser of a reducing course that she has heart trouble and high blood pressure. She now feels discouraged because of the dread words "heart disease" and fears to go to a competent cardiac specialist for advice and treatment. So to solace her "few" remaining days she has bought herself a fur coat! This intelligent woman thinks her heart is a hopeless matter. Why any more so than her lungs? One valuable feature of reducing courses to "keep slim and fit" is the physical examination which is required before one begins to "thin"; such an examination often unmasks some hitherto unknown condition which needs attention.

Every one believes that the ounce of prevention is worth the pound of cure, and yet how many fail to act in accordance with this time-worn adage. It is particularly applicable in the case of heart attacks. Many persons imagine

By
LOUIS FAUGERES BISHOP, JR.



HUDDLED TOGETHER IN A SMALL ROOM
PAIN, WHICH STOPPED ONLY WHEN HE RELAXED

that heart attacks come suddenly out of a clear sky; they do not realize that nature sets her danger signals along the path of life. If these signals are heeded, the individual continues serenely along his way; if they are disregarded, there comes a crash, and we see in the papers the hopeless words, "suddenly, at 53, of a heart attack." Not infrequently we hear a conversation such as the following: "Did you hear that Bill has joined the great majority, Joe? He was in his office attending an important conference about the future policy of his business when he had a heart attack and passed out. He was only 53, too."

What a waste and how unnecessary! This "suddenly at 53" might well have been peacefully at 80. Bill failed to recognize the danger signals; or, if he recognized them, he failed to heed them. There was that slight feeling of discomfort in the chest, hardly a pain at first but more what old-fashioned persons would call a "misery," which Bill concluded was indigestion and which he treated with sodium bicarbonate. As time went on, there was a sense of fulness, or oppression, in the chest, and the pain became really noticeable, sometimes spreading to the left hand and arm. Often in business conferences, crowded, huddled together in a small room filled with cigar smoke, Bill felt this pain, which stopped only when he relaxed. The same feeling would recur as he hurried away from his office to catch the 5:20 train and would disappear after he had rested on the train. Bill also noticed that the feeling of oppression would appear following one of the large banquets which he found it necessary to attend for business reasons. Bill found that he could not run upstairs without discomfort in breathing; and on Saturday afternoons on the golf links he was more and more liable to find that the others went at a pace which made him puff to keep up with them. He became irritable and tired easily, and sometimes at the office he felt sleepy, even when in important conferences. His feet and ankles got puffy at times. Otherwise he felt well; and as these symptoms had a way of disappearing from time to time, especially when he had a chance to relax, Bill paid little attention to these danger signals. So, there was snuffed out a life which, under proper medical advice, might have been long, happy and useful.

PERHAPS other Bills will pay greater attention to nature's warnings, for noticeable indeed is the recent increase in the number of persons who are reported to die suddenly of heart disease accompanied by severe pain, or "acute indigestion" as it is called.

The public generally is becoming heart conscious, for heart attacks have taken heavy toll of men who were important in public affairs, and statistics show that the trend of heart disease in the last thirteen years is upward. It is readily conceivable that in these figures the cumulative results of the last few memorable years of stress and panic can be read. Every department of medicine has advanced enormously in the last twenty-five years, and this quarter century has added more to the knowledge of the heart and blood vessels than had been achieved in the previous half century. Although blood pressure was measured as far back as 1710, it is only in the last few years that its importance has been recognized. Doctors have been studying the pulse and its vagaries since 1581.

There are two kinds of heart disease; one stands for the heart disease resulting from infection, which can sometimes be traced to infected tonsils, scarlet fever, diphtheria or bad teeth. The other kind is labeled under the dread

ON SATURDAY AFTERNOONS ON THE GOLF LINKS HE WAS MORE AND MORE LIABLE TO FIND THAT THE OTHERS WENT AT A PACE WHICH MADE HIM PUFF TO KEEP UP WITH THEM.

phrase "coronary disease," which to many persons means nothing, but which may be explained, as my old teacher describes it, as a "plugging of one of the blood vessels that supply the heart with blood." I was recently amused at finding that coronary disease has even invaded the movies. In the popular "Dinner at Eight" much is made of the coronary thrombosis of the host and his pain in the chest, the doctor gravely administering something for his relief. Especially interesting to me was the fateful atmosphere with which the poor victim seemed to be invested. Today the medical profession is trying to change that point of view by throwing a little sunshine on the heart sufferer through telling him how to live.

All attacks are not equally severe, and many a person, after a mild coronary thrombosis, has gone on with an impaired circulation in his heart muscle but with ability to lead a comfortable life within the limitations imposed by his heart condition. From time to time there is a practically complete recovery from a typical attack of coronary thrombosis. No matter how severe an attack may be, there is always hope of complete recovery.

On Lincoln's birthday, radios broadcast many of his wonderful parables drawn from his life on the farm and in the woods. If Lincoln were alive today, he would find many parables to be drawn from the automobile; indeed, hearts and automobiles have much in common. If the automobile is new, it will stand much abuse, and one can leave it in front of one's door and step into it night and morning without hesitation. In the same way young people's hearts are seldom injured by physical exertion; their only caution must be to keep away from all things that cause rheumatism and its first cousin, tonsillitis.

I have a friend who runs a 10 year old automobile, and he keeps it going very well; but he puts it in a garage at night, always oils it carefully, keeps it in adjustment, never goes at a high rate of speed and even stops to let it cool off once in a while. Just so must the man of middle age sleep at night under cover and be well protected. He must get up in a leisurely manner in the morning and carefully prepare himself for the day, avoiding haste in all things. He will go on smoothly day after day, like my friend's automobile, if he will lead a quiet outdoor life, take a monthly dose of castor oil, observe a diet consisting of a few well chosen, simple articles of food, pay due regard to the slightest discomfort in the heart, avoid controversies and, in general, slacken his pace.

In coronary disease, the key to preventing heart attacks is to keep the arteries open. An obstructed artery is like a car that is affected by rust; to represent the circulation of the various fluids of the body, the pipes through which the water and oil and fuel circulate are not quite clear; the carburetor, representing the lungs and breathing, is not quite well adjusted; the commutator, representing the brain and nerves, is not perfect in its action, and every little while there is hesitation or a spark in the wrong place.

WHAT is a good heart? What is a bad heart? A man thinks that he has a good heart if he comes through a life insurance test with flying colors and that he has a bad heart if he fails to make the grade. How far from true this happens to be, the life insurance companies could tell us with tears in their eyes on account of their payments for disability caused by heart disease.

Every one who has a tendency to heart attacks should have a continuous friendly relation with some kindly physician and should visit him every month or two. If the patient is subject to real attacks, he should carry, under the direction of his physician, certain emergency medication, which the doctor will prescribe. If the heart is seriously out of condition, the patient should consult his physician for necessary advice at short intervals.

It is impossible to give any rule for heart attacks that must not be modified by the personal experience of the sufferer. A woman had a severe attack of palpitation when she held four aces in a poker game; others get palpitation when they do not hold four aces. Every

one who is subject to heart attacks should study his own experience as to what brought on the attack and avoid that in the future. Even such a study is not easy, because one is so liable to attribute an attack to what went before it, while in fact there may be no connection. To prove the connection between the cause and the effect, one must find the effect regularly following the cause and not jump to the conclusion that one thing causes the other merely because this chances to occur once. Persons who are not careful in these studies find themselves needlessly giving up one thing after another; but if the sufferer feels a palpitation every time he drinks a cup of tea or smokes, it is fair to suppose that the tea or the tobacco is the cause.

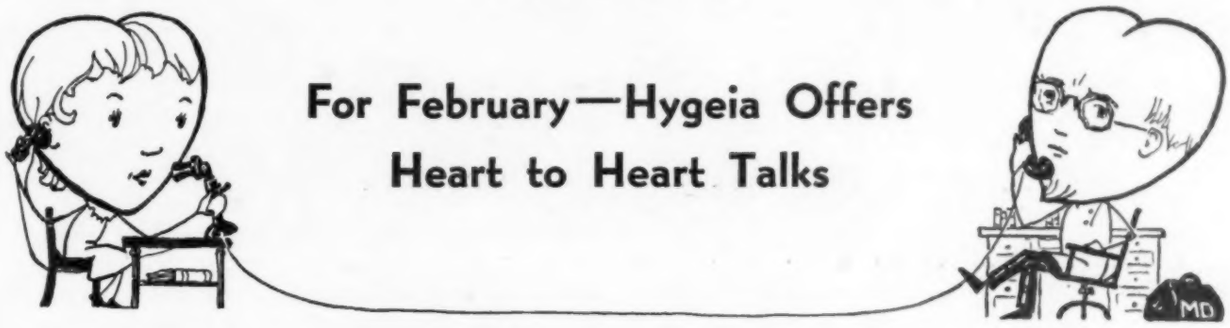
IT MAY be said in general that the minor heart attacks, such as palpitation and fainting, are caused by some specific occurrence or action at the time; while severe attacks, such as coronary thrombosis accompanied by severe pain and profound disturbances of the heart beat, with heart failure, are brought about by wrong living or accidental infection.

To avoid ordinary attacks of palpitation one must be a little careful of food and behavior.

To avoid severe and possibly fatal attacks, one must revise the whole mode of life, including habits of work, diet, exercise and particularly indulgence in worry.

Modern cardiology does some wonderful things, and many a man who would have been condemned to a life of hopeless invalidism not so many years ago is today leading a happy, useful life because he has been taught by proper medical advice how to live with the heart he has.

The never ending effort of the radio to bring happiness to people by amusing them and also by talks on the philosophy of life is a big factor in the prevention of heart attacks. I recently heard a radio speaker read a poem advising people to keep the corners of their mouths turned up instead of letting them turn down, and I am sure that fellow contributed at least a fraction of 1 per cent toward the prevention of heart attacks in people who heard him that day. His poem was only a grain in the sands of prevention, but everything helps.



For February—Hygeia Offers Heart to Heart Talks

"We look at Niagara Falls and see the limitless flow of water which makes that mighty spectacle," writes *Dr. Robert Sterling Palmer.* "We see the vast engines turned by its unfailing power. Yet unseen and unknown to most of us, all the hearts of the United States pump almost as much blood daily, 130 billion gallons. . . . What happens to these hearts? . . . One heart in six fails. . . . What can be done about it?" The answer is given by Dr. Palmer in his article entitled "A Heart to Heart Talk."

Sophia Yarnall, whose deep and sympathetic understanding of child psychology has been shown in many articles in *Hygeia,* gives wise counsel that will save many a heartache in the younger generation. "The time has gone," she believes, "for parents to spell in front of their daughters, 'I know she is very p-r-e-t-t-y,' as though it were an indecency which the daughter must never fully understand. Far better that they acknowledge her good looks with pleasure. . . . A child should be taught early to make the best of his physical equipment just as he is taught to have good manners because, and it is a really big because, it is pleasanter for other people."

"Times have of course changed since the generation in which George Washington lived," writes *James A. Tobey, Dr.P.H.,* in an article entitled "Preventable Diseases in the Washington Family." "Sanitary science and the art of preventive medicine have made tremendous progress, so that most of the diseases that were rife in the eighteenth century have yielded to the conquest of men. . . . If Washington and his relatives had lived today, it is reasonable to assume that many of the maladies from which they suffered would have been prevented and that many of the untimely deaths, especially among infants and children of the family would have been postponed."

In "The Challenge of the Slums," *Helen Alfred,* secretary of the National Public Housing Conference, declares that the great mass of the people of the United States occupy dwellings which are a constant menace to their physical, mental and moral health. "The child is always the first and easiest victim of a bad home and social environment. Plastic-minded and sensitive to impressions during those early years spent in ugly physical surroundings, he forms attitudes and habits which are usually modified only with the greatest difficulty, if they are ever modified at all." The future has, however, a brighter outlook; for, she continues, "It does not take a great stretch of the imagination to envision the benefits that will accrue to the great mass of the population with the elimination of substandard housing. Adults, youths and children will be transplanted from conditions of overcrowding and dilapidation into surroundings designed to build health and to encourage self respect and contentment . . . and generations of families will be immeasurably brightened and made more compatible with the ideals and theories of American life."

SEX EDUCATION FOR YOUNG

By
MARY PRICE ROBERTS

MOST of the reasons commonly advanced for giving sex education to young children may be summed up by saying that we want to avoid undesirable situations. It is true that we do not want the child to regard sex organs and sex functions as shameful, we do not want him to get vulgar misinformation from children with distorted ideas, and we want to avoid the shock that comes when a child discovers he has been deceived. However, there are things to accomplish as well as things to avoid. Sex education is needed to help the child understand his world, to prepare him for the complex problems and emotions of adolescence and to retain his confidence.

The world is full of things the normal child wants to know: "How did you know whether I was a little girl or a little boy?" "Why do we keep roosters when they don't lay any eggs for us?" "Was the neighbor's baby born with its pink blanket on or with its blue blanket on?" Many such questions come up. Why should we not tell him the simple facts about sex when he needs them in order to understand things about him, just as we teach him colors and numbers and explain to him that fire burns and that dogs bark?

"If I told Sonny we were going to have a baby, he'd ask me how I knew and all about it; so I just decided not to tell him anything." I have no doubt this mother spoke truly. Each explanation does lead to another question. This is true in all fields, not alone in sex education. When the child learns something new it helps him to understand some things that were puzzling; but he soon discovers another problem and comes back for more information. Each stage is a foundation for succeeding stages. This is the way children learn.

Imagine trying to build a skyscraper on a foundation that was constructed in a week or two. Yet some parents seem to think that a child can be taught in a few weeks all the knowledge he needs in order to manage the sexual emotions experienced in adolescence and to solve successfully the complex problems that arise in the relationships of adolescent boys and girls. Parents might find adolescence less troublesome if the child had to deal, at that time, only with those problems which rightfully belong to that stage of development.

Another aim in giving sex education to young children is to retain their confidence. Little children naturally turn to their parents for much of their knowledge; but they go to others if the parents do not answer their questions, whether these questions pertain to sex or to something else. When this happens, the parents lose something which is essential to wholesome parent-child relationship; this essential is confidence.

WHEN a mother is pregnant, she may gain much by taking her children into her confidence. This is not only a chance to give sex education but a splendid opportunity for sharing the pleasures of anticipation, building a love for the new baby and preparing the child for the new situations he will have to meet, such as sharing his playthings, the attention of the family and even the family itself.

One mother told her little daughter, less than 2½ years old, about the baby who was coming.

CHILDREN

"SHE MADE A REGULAR FOOL OF HERSELF AT THE CLASS PICNIC. SHE'S ALWAYS MAKING BREAKS."

She found ways for little hands to help with the baby clothes. Together they planned that the baby should have the baby cab and decided that when he was big enough he could use the playthings, too. The mother explained that she would be mother to both children and that their daddy would be daddy to both. "We'll all like you just as we do now, but there will be two little folks instead of one. The baby will have the same folks you do. Grandmother will be the baby's grandmother; grandfather will be the baby's grandfather, and it will be that way with everybody but you. You'll be the baby's sister, and nobody else will; and the baby will be your brother or sister, and nobody else's brother or sister." The child looked at her mother and said, "Yes! And I will let the baby use all my folks."

Some parents believe sex education is desirable in many respects for young children but see too many obstacles in teaching it. One objection is that the children may tell their playmates, whose parents would be shocked. Five year old Walter came home from kindergarten one day in a state of indignation. He had walked home with two neighbor children. "And we got to talking about where babies come from," he said, "and Billy said they dig 'em up in the garden, and Susan said the doctors bring 'em!" "And what did you say?" his mother asked. "I told 'em it was no such thing, because our mamas make 'em." The mother was disturbed at first, wondering what the other mothers would think. Then she said to herself, "Did Walter tell the others anything worse than they told him?" Little children are likely to discuss sex matters with each other, just as they discuss other subjects. They do not always realize that a certain topic belongs in the forbidden class; nor do they always remember parental injunctions as to secrecy. However, if topics pertaining to sex do come up for childish discussion, is it worse for the child to tell the truth or to tell a fable?

ANOTHER reason why parents do not give sex information to little children is that they dread embarrassing remarks. One mother was greatly embarrassed by her 4 year old boy, who did not know their neighbor was going to have a baby. He came weeping into the room where his mother was entertaining callers. "Mama," he sobbed, "Mrs. Smith stole my kitty, and she won't give it to me. I couldn't find Fluffy anywhere, and I asked her if she'd seen her and she said 'no'; and she had her under her coat all the time, 'cause I could see where it stuck out." Children do make embarrassing remarks, but these come whether or not the child is informed.

Embarrassing questions are not always concerned with sex. Imagine the embarrassment of a mother at a church dinner when her little boy pointed to a man a few feet away and piped, "Mama, what makes that man so awful fat?" Children make embarrassing remarks simply because they have not learned what adults consider proper or improper.

Many parents are puzzled as to the time to begin sex education. Since authorities do not agree, this is not surprising. Some writers say that the first knowledge should be given between the ages of 4 and 7; some say that when questions are asked they should be answered. If questions are answered when they are asked, sex education will usually begin before the fourth year and certainly before the seventh.

Some authorities on child welfare say that parents should not wait for the child to ask questions. To support this point, one writer says: "Do they wait to teach the child table manners until he asks to know—until the child comes and says, 'Oh mother, please tell me how to use my knife and fork?' Or for a geography lesson, do they wait for the child to plead, 'Oh mother, do tell me the population of Texas!' "

Probably we try to force knowledge of some things on the child before we should. After all, why should a child want to know the population of Texas? Why should he plead to be told?

TOGETHER THEY PLANNED THAT THE BABY SHOULD HAVE THE BABY CAB AND DECIDED THAT WHEN HE WAS BIG ENOUGH HE COULD USE THE PLAYTHINGS, TOO.

Sex education is a different matter. As already pointed out, a child wants to know some things connected with sex, and he should be told. He will probably ask questions early enough to satisfy the most extreme opinion.

However, if a child does not ask any questions pertaining to sex by the time he is 4 or 5 years old, the parent should try to start the questions. He can lead to the subject through comments about human beings or other animals. Or he can ask a question which calls for an explanation, such as, "Do you know what the tassel of the corn is for?"

In deciding how much to tell at any one time, the parent must consider the child's needs. Questions are one indication of these needs, but there are other things to consider also. For example, though your child may not ask any questions which call for an explanation of sexual intercourse, some child who delights in spreading vulgarized sex information may move into your neighborhood or enter your child's school. If your child is liable to be exposed to such a companion, you should tell him at least enough to enable him to detect the falseness of the big news that is being broadcast.

Special situations may arise which cause parents to tell their child some things sooner than they otherwise might. In a certain small town a baby was born to an unmarried girl. One mother knew that her little daughter would wonder about it, as sexual relationships had been explained to her as existing between husband and wife. This mother brought up the subject of new babies, of how they usually resembled their fathers in some ways and their mothers in some ways. "But Mama," the little girl said, "that girl who lives down near the power house has a baby, and the kids say she isn't married. How can that happen?" Then the mother explained that sexual relationships could exist outside of marriage but that people, through ages of experience, had found that marriage was the best way to protect little children, who need their fathers, and to protect the mothers, who need help while they are weak and while the children are growing up.

Another point for parents to bear in mind in deciding the "when" of sex information is the knowledge the child's companions have. One mother tried to find out why her daughter and the other girls had dropped Jean. "She made a regular fool of herself at the class picnic," the daughter said. The mother asked what had happened.

"Well, we went out to the woods for the picnic, and Jean found two butterflies together. And she carried them all over and showed everybody the 'Siamese twins' she'd found. And then when they came apart, she went around moaning about it and saying she didn't know why they came apart. Just imagine! Before all the boys!"

The mother tried to explain that Jean was not to blame, that she just did not know some things the others had been told.

"Just the same, you don't need to think we want her around if she's going to make remarks like that before everybody. She's always making breaks," the daughter replied.

When a child "makes breaks" or in other ways shows what his companions consider great ignorance of sex, they are likely to call him a fool, a simp or any name that will express their contempt. Then some one usually "educates" him. The voluntary teacher is usually more impressive than delicate. One mother, who guessed what had happened because her son appeared guilty and ashamed when he was around her and was not as loving as he had been, called him to her and frankly asked, "Has some one told you things you didn't know about how we get babies?" Then the whole dirty story came out. The mother explained and corrected the misinformation and succeeded, apparently, in undoing most of the mischief. Of course, what worked in this case may not suit another case at all. Each must study her own child to know how to handle his situation.

Nature study can be used to bring out questions and make explanations clearer. A little boy went fishing with his father and saw the milt that came from the fish when his father took it off the hook. He asked what it was. This led to an explanation of fertilization in

fish, chickens and human beings. I do not mean to imply that if the child has knowledge of reproductive processes in plants and the lower animals he will understand human reproduction. I do not believe that, but the facts that pertain to human beings can be taught by pointing out the similarities and differences between human beings and other organisms.

As I have said before, sex education is a matter of gradual growth. It should not be administered in one dose but should be regulated by the child's needs. If the child asks at an early age where babies come from, it is usually enough to tell him that they grow inside the mother. He will come back later for more information. He will probably want to know how the baby gets into or out of the mother's body.

I KNOW a mother who told her 7 year old daughter that she did not know how the new sister was born. "It happens when the mother is asleep," she said. She excused this statement on the grounds of being under an anesthetic at the time of delivery. When the little girl reported the mystery to her companions, one of them said, "Why, my daddy knew all about it. The baby grows in a special place called the uterus. It grows until it's big enough to be born, and then the muscles squeeze down and push the baby out. It comes out through a special tube that has an opening in the mother's genitals."

When the child first asks how the baby came to be in the mother, he may be told that the baby grew from an egg that was already in her body. Later he will want to know what made the egg grow into a baby when it did, rather than earlier or later. He can be told that the baby does not start to grow until a sperm joins the egg. This joining of the sperm and egg is called fertilization.

A comparison with plants and animals is particularly helpful in explaining human fertilization. The egg grows in the mother, and the sperm comes from the father. In plants it is called pollen instead of sperm. The pollen of corn falls from the tassel to the silk and proceeds down to the little egg; the kernel of corn will not develop unless the egg is fertilized. Hens' eggs will not hatch unless they have been fertilized by the rooster before they are laid. Corn and other seeds must have the right conditions, such as moisture and warmth, to grow. Eggs have their own moisture, but the little chickens will not start to form unless the eggs are kept warm. The human egg, or ovum, starts to grow as soon as it is fertilized, for it stays in the mother's body where it has both warmth and moisture.

After a while the child will probably ask how the sperm gets to the egg. One 6 year old child said to his mother, "I don't see how it's managed. If you swallowed it, it would change in your stomach and be spoiled. So how is it managed?" The mother explained that a tube leads from the uterus, the place where the baby grows, to an opening in the genitals, and that the sperm is placed in this tube. The sperm comes from the father's genitals. That is why the father's genitals are shaped as they are, so the sperm can be put into the tube.

Parents should not be too much worried about their own embarrassment. If they were taught that everything connected with sex was vulgar, it is natural that they should feel embarrassed in trying to discuss sex with their children. There are three suggestions which may help. The first is to tell the truth, the second is to tell it simply, and the third is to remember that little children are not embarrassed by the subject.

In all probability it was largely to relieve their own embarrassment that people used to try to surround the commonest facts of reproduction with sentimentality. The fact that people long ago believed the heart was the center of affection does not justify us in pretending that it is particularly lovely for the baby to grow under the mother's heart. If we were to be consistent with such an idea, we might need to explain why the baby grows beneath, beside or above other organs that may not be so poetic.

NEITHER can the wonderful news be told in a special setting, just as the sun is sinking, and the robin is singing to his mate, and insects are flitting from flower to flower. Mother cannot wait to take her child on her lap in the hush of the evening and tell him a wonderful story. Questions come at unexpected times. Perhaps the child sees mother dressing a chicken and asks about the tiny eggs inside. Opportunities arise in connection with everyday situations. When the child wishes his dog would have some puppies, the parent may explain that his dog is a male and that male dogs do not have puppies. It is by explaining facts to the child as he encounters them that sex education becomes a part of gradual growth and development rather than a mysterious subject set apart from all others.

Sex is not a matter of mere information; it is vitally connected with the emotions. The young child, however, is primarily concerned with building a foundation of information. If this is given to him frankly and simply, he is likely to accept it in much the same manner as he accepts the fact that chickens lay eggs and cows give milk, both of which are sexual functions. With such training he can more easily understand the emotional side of sex, which becomes increasingly important during the adolescent years. What is more, the parents will have retained his confidence and will be able to discuss the subject with him and guide him over dangerous shoals when he is trying to shape his ideals.

THE MIRACLE

"SOMETIMES," the Doctor said, "a physician performs something pretty close to a miracle. Science has its extraordinary triumphs, but the real miracle worker is still nature. I am thinking of the case of Joan Arden and Tom Hutchins."

AT A DANCE IN HIS FRATERNITY CLUB, TOM SAW A SLIM, EXQUISITE GIRL WITH CORN COLORED HAIR.

TOM had never had a day of sickness in his life and had practically never encountered anything in the way of misery or helplessness. Up to the time he went away to college, he hadn't been out of the prosperous small city in which he lived.

Tom met Joan, if you can call it a meeting, when he dropped in at the Ardens' home for a brief call on Henry Arden, who was a pal of his.

Joan had just been brought home from a hospital, where the physicians had told her parents that they couldn't do anything more for her. Joan hadn't been told, and in her helpless state she wouldn't have realized the significance of the physicians' verdict, anyway.

So they met, stalwart, upstanding Tom, and Joan, so weak that she could only lie on her back, so blind that she saw Tom, if at all, as a hazy blur. Her condition was such that her arms could only weave about aimlessly and her mouth issue unintelligible sounds that were pitifully unlike the speech she was trying so hard to utter.

Tom looked at her with shocked incredulity. All his experience had been with haleness, strength and vigor. Such helplessness, such vague, impotent feebleness filled him with pity, but also with something close to disgust. He stared at Joan silently for a moment, then turned and walked hastily out of the house.

A few minutes afterward the family doctor came to visit Joan. When he came out again, Tom stopped him.

"Doctor," he said, "did you see her?"

"Yes," said the doctor gravely, "I saw her."

"Poor thing," said Tom. "Will she be like that long?"

"There is always hope," the doctor said. "What seems a hopeless case today may find a remedy tomorrow."

"It would be awful if she was always like that," Tom observed.

"Only time can tell," the doctor answered. "What science cannot accomplish, time and nature may."

And with that Tom had to be content, although his heart was heavy for his comrade

Henry whose sister must lie helpless and half blind in her room while a great world went about its work and play in the sunshine, the wind and the rain.

That was to be Tom's only sight of Joan Arden for several years. With the queer kink that is in so many men who are healthy and strong, Tom avoided contact with places and persons that were otherwise. Three months after the first meeting the Ardens moved away. When Tom next saw Joan he had graduated from college and was working in a business office in New York.

At a dance in his fraternity club, as he stood in the stag line awaiting his chance to rob some brother of his particularly attractive partner, Tom saw a slim, exquisite girl with corn colored hair dancing like a windblown bit of milkweed fluff with Chapman Hildreth. Tom wasn't poetical, but he asked Jim Doran, "Who's the dryad Chappie's stepping with?"

"Dunno," said Doran. "A nifty frill, though. I'm gonna cut in and find out."

"After me, my dear gaspipe," said Tom, and shot out of the line to touch Chapman on the shoulder.

"Introduce me, Monsieur," he told Chapman. "I would dance with her."

"Oh, you would, would you?" inquired Chapman. "Well, I dunno about that."

"You don't, don't you?" queried Tom. "Are we then to have a scene? Pistols for two, perhaps? Come on, Chappie, don't embarrass Miss—"

"Miss Arden, confound you," said Hildreth. "I warn you, Miss Arden, this is a bold bad man with no principles."

"How delightful," said Miss Arden, as she swung into Tom's arms. "Men without principles always get my interest."

Of course the girl was Joan Arden, the helpless, the half-blind girl who lay on her back for a long time and couldn't even utter intelligible speech. Yes, this slim dryad, radiating health and happiness and joy, was Joan Arden.

Physicians could do little for her, but nature had performed the miracle.

Oh, yes, she married Tom.

THE DOCTOR relit his pipe and gazed at me blandly, as if to intimate that his story was finished.

"Well," I said, "come clean. How did nature accomplish all this?"

"Just as she always does," said the Doctor, "by the simple processes of growth. You see, Tom was only 10 years old when he first saw Joan, and Joan had only been born about a week. A week-old baby isn't much to look at, and the doctor was sort of kidding Tom when he spoke as he did."

"Huh!" I said. "Then the baby grew up into a pretty girl. Where's your miracle?"

The Doctor smiled.

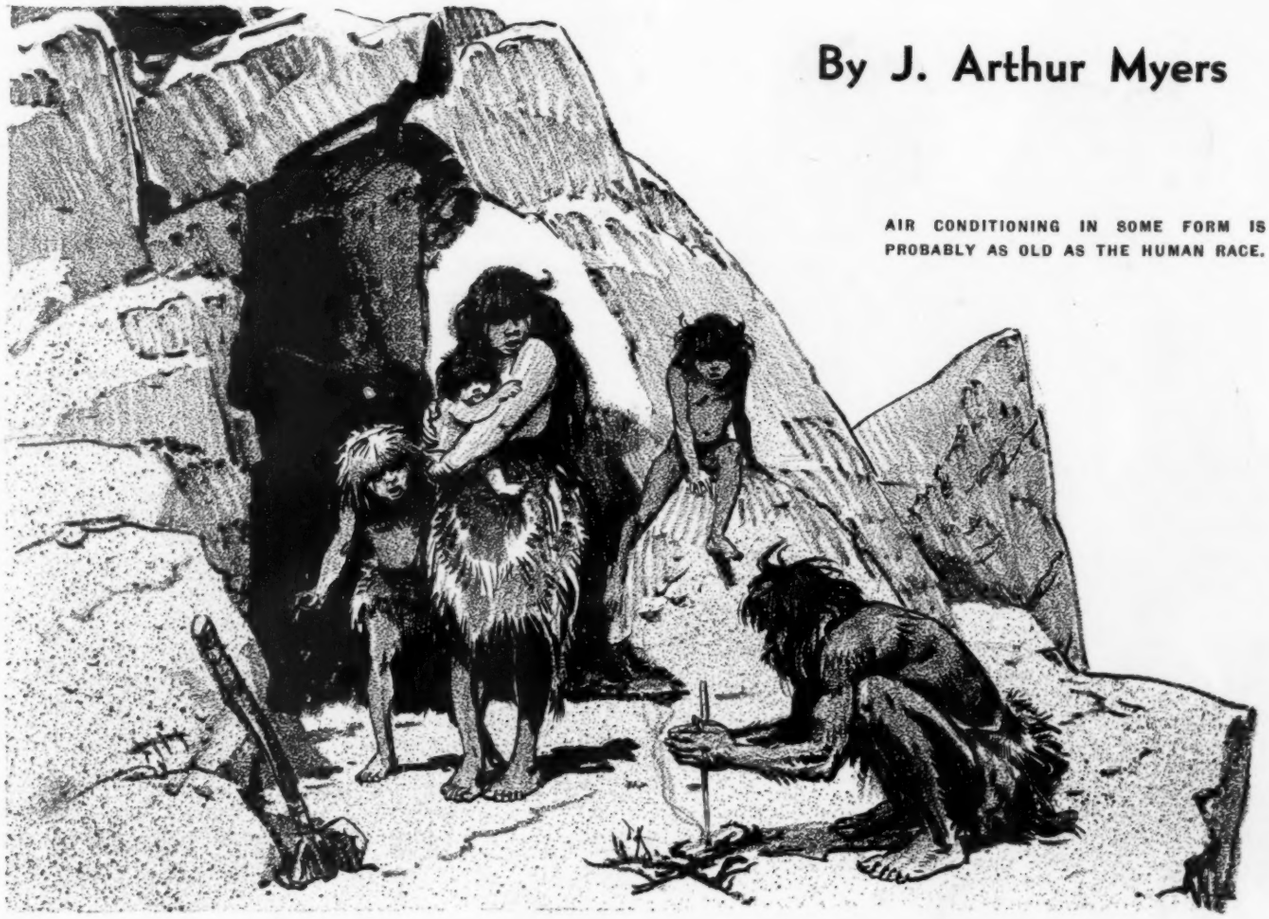
"If you can see a miracle in every process of growth and development, if the miracle of a rose is a miracle to you, then you can see a miracle in Joan Arden's loveliness that bloomed from the helpless, vague-eyed lump of life that was Joan at the age of 1 week when 10 year old Tom first saw her. Yes, the real worker of miracles is still nature."

On second thought, I believe the Doctor said something.

By BERTON BRALEY

WHY CONDITION THE AIR?

By J. Arthur Myers



AIR CONDITIONING IN SOME FORM IS PROBABLY AS OLD AS THE HUMAN RACE.

OF THE VARIOUS elements essential to life, air is the most important. It is possible for the body to live without food for a few weeks, without water for a few days but without air for only a few minutes. Air plays a double rôle in our well being, for not only is it taken into the lungs where it provides oxygen for the blood stream and where it receives carbon dioxide given off from the blood stream, but our bodies are completely immersed in it. Air that is too hot may burn a man to death in a short time, while that which is too cold may cause death by freezing his body. Physiologists have determined the atmospheric conditions at which the human body functions best. With air taking first place in the essentials of life, it is surprising that so little attention has been paid to its proper conditioning. Food and water have been conditioned so as to make them safe for human consumption, yet air with its contamination, changeable temperature and humidity has been allowed to be taken into the body and to come in contact with it unchanged.

On first thought, we look on air conditioning as a new idea, but in reality in some form it is probably as old as the human race. The cave man sought air as free as possible from undesirable factors; for example, he inhabited the caves largely because he sought protection from storms and from the extreme heat of the sun. The discovery of fire was a long step in air conditioning and made it possible for man to inhabit many parts of the earth which otherwise would have been unsuited to him. Through fire, man was able to leave the caves and build around him some protection from storms and wind and, when necessary, heat the air within to a comfortable temperature.

Until recently the modern house was one with proper plumbing for bathing and toilet facilities, a heating plant that distributed heat throughout the house as necessary, and a fresh air system that provided for the entrance of outside air through large numbers of windows, in addition to a sunroom or an outdoor sleeping porch. Today the modern house is thought of in a different way. Modifications in the plumbing and in the heating plant are being made to condition the air; the windows are immovable and so constructed that there is no leakage around them; the outside sleeping porch is obsolete; the ventilating system provides for the removal of contamination, such as pollen, dust and other foreign materials; the air is cooled

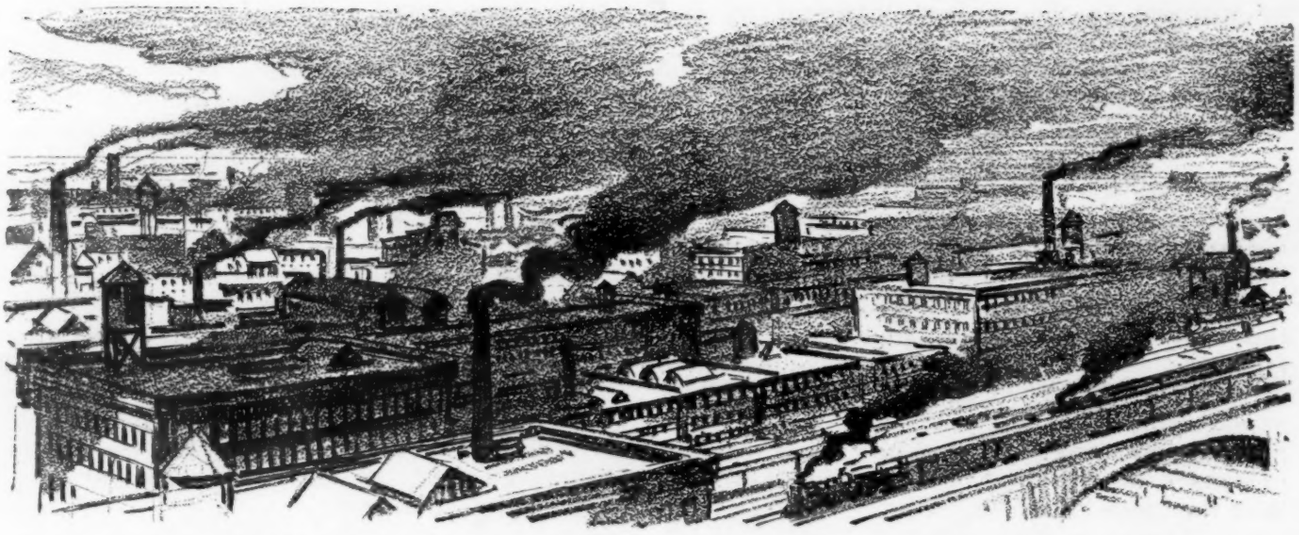
or warmed to the desired temperature, and moisture is decreased or increased as necessary. In such a house one may enjoy throughout the year clean, balmy air of the temperature and humidity in which the body thrives best.

THE question is often asked why there has been such delay in arriving at refinements in air conditioning. There are three main causes, the first of which is mystery and superstition. Primitive man saw the lightning; he heard the thunder; he saw the rain and snow descend from the air; he heard the wind whistle, and all were mysterious to him. He had no simple explanation such as even children now have available in books. There is no clearer proof of ignorance and superstition concerning the air than the name "malaria," which is derived from "malo," meaning bad, and "aria," meaning air. This name was applied to a disease which was prevalent largely in areas where there was considerable stagnant water. Odor from decaying animal and vegetable matter was noticeable in the air; the fog from the water was visible, and hence this name was applied to the disease decades before it was learned that a mosquito bite was the real cause. Even tuberculosis and many other diseases such as those due to dietary deficiencies have been attributed to the air, which has also been looked to for a cure. In fact, man almost overlooked the true factors responsible for improvement and recovery from tuberculosis in his great desire to give all the credit to fresh air. Less than a century ago he even thought that there were "immune" areas on the surface of the earth where people never contracted tuberculosis and that those who had it would get well if they moved to these areas. Even after 2,000 years of wandering about the earth seeking a cure for tuberculosis by dwelling in the atmospheric conditions of such places as Mammoth Cave, by building houses in trees, and by going to the sea level, then to the mountain peaks and now to great altitudes by airplane, man has not yet found that mysterious air which cures tuberculosis.

Another reason for the delay in refinements of air conditioning is that at first only the chemistry of the air was studied; oxygen and carbon dioxide were discovered, and both were essential to life. One must be taken into the body, and the other must be eliminated. Therefore the sole effect of air on the body was thought to be through its inhalation and exhalation. Animal experiments were performed to prove the point. For example, a mouse was placed in a small container with a candle. The candle was then lighted, and the container was sealed hermetically. In a few minutes the candle went out, and the animal died. The conclusion that so much oxygen had been used up that there was no longer enough to provide for combustion of the candle or the life of the animal, or that carbon dioxide had reached fatal concentration, was correct. There is no question that oxygen is essential and that carbon dioxide must be eliminated, but no one lives and works in hermetically sealed containers. The buildings in which people live and work have never been air-tight even with the windows and doors closed. Therefore, while the animal experiment proved certain facts, practical ventilation should never have been built on these facts alone. Yet on this basis, man sought to explain even tragedies. For example, in 1756 when 146 prisoners were placed in a room 18 by 14 by 10 feet in the Black Hole of Calcutta, only 23 were alive the next morning. Immediately the conclusion was that they used up the oxygen and there was a lethal excess of carbon dioxide. The truth is that there was adequate window space to supply an abundance of outside air. The deaths were not caused by a lack of oxygen or an excess of carbon dioxide but by improper conditioning of the air.

OUTSIDE air is composed of approximately 79 per cent nitrogen, 20.96 per cent oxygen and .04 per cent carbon dioxide. Other elements are present in small amounts. The air that we exhale contains approximately 79 per cent nitrogen, 16.02 per cent oxygen and 4.38 per cent carbon dioxide. Analyses have shown that in an ordinary house the carbon dioxide content of the air rarely exceeds four times that of outside air. In order to have any noticeable effect on the body, it would have to be from 50 to 100 times as great; that is, a concentration of from 2 to 4 per cent. Even then there would be no poisonous effect. Such concentration is never reached in homes or most buildings where people live and work. In certain parts of breweries the carbon dioxide concentration in the air is from 0.5 to 2 per cent, but the employees do not experience any ill effects. The oxygen content normally found in outside air may be considerably reduced with no outward effects on the body; for example, in mines it is often maintained at 17 per cent, whereas, at altitudes such as that of Pike's Peak it is approximately 13 per cent. With the latter concentration, symptoms of mountain sickness may result, but after a short time even they disappear. At an altitude of approximately 1 mile, such as that of many health resorts, the air contains less oxygen than that of a badly crowded room at lower levels. Therefore, we need have no concern about the oxygen and carbon dioxide content of the air in most of our present buildings.

The third main reason for the delay of refinements in air conditioning is the so-called educational work of the fresh air faddists. To this day, we are suffering terribly from their teachings. Undoubtedly, this is responsible in no small way for numerous epidemics of colds,



THE CONTAMINATION OF THE AIR IN LARGE CITIES FILTERS MUCH OF THE ULTRAVIOLET LIGHT FROM THE SUNSHINE.

which so frequently lead to more serious conditions, such as pneumonia and sinusitis. Fresh air faddists have even convinced many educators that children cannot be given a 100 per cent health habit rating unless they state each morning that they have slept with their windows open, no matter how cold the outside air is. Many persons have been so convinced that outside air is necessary for sleeping that they are certain their health will be seriously damaged if they sleep with their windows closed. They remind one of the story of the man who was nearly asleep when it occurred to him that he had neglected to open his bedroom windows for the night. Being so sleepy, he put his hand against the glass; but because of difficulty in raising the window, he broke the glass in preference to taking any chances on breathing inside air. He returned to bed and slept soundly and felt normal when he arose in the morning, but on looking around, he found that all the windows were closed; he had broken the glass in his bookcase. Most of the teachings of the fresh air faddists are absurdities, as they have never been based on fundamental principles; yet often legitimate funds have been used to disseminate them.

It was not until 1914, when such guiding spirits as those of Drs. W. A. Evans and E. V. Hill of Chicago showed that in most places where people live and work there is not a deficiency in oxygen or an excess of carbon dioxide sufficient to cause illness or any discomfort whatever. They, as well as the New York Ventilation Commission which consisted of some of the finest experts in this country, working under ideal conditions, pointed out in 1923 that it is the physical qualities of the air which cause discomfort, headache, loss of appetite and even death. These physical qualities were found to be temperature, humidity and circulation of air. From extensive studies and observations made on experimental human beings they found that the body functions best with a room temperature of approximately 68 F., with a relative humidity of from 40 to 50 per cent and with the air in slow circulation. With higher temperature and humidity, people were not so comfortable and their bodies did not function so well. For example, when the temperature was 80 F., and the relative humidity was approximately 86 per cent, which is less than that of a good many summer days, working capacity was reduced approximately 25 per cent, appetite was reduced so that food intake was down approximately 13 per cent, and general discomfort was suffered. Oxygen was present in abundance, and carbon dioxide was not in excess of its usual percentage. Today, many employers have become cognizant of the fact that such temperatures and humidity reduce the working capacity of their employees to 75 per cent of the normal, so that proper atmospheric conditions are now provided for them both in winter and in summer. Some restaurants, business offices, shops and railroads are already equipped with conditioned air.

Persons ill in hospitals and homes do not improve rapidly under high temperatures with improper humidity. The physician who knows that the patient whom he desires to build up through diet will take approximately 13 per cent less food under bad atmospheric conditions will insist on air conditioning in hospitals and homes where he treats his patients. Many physicians have stated that their tuberculous patients make more improvement during one winter than during two summers. This in all probability is due to the frequent high temperatures and humidity of summer. During and following a heat wave, the newspapers try to report the total number of deaths which have resulted. The chances are that this number includes only a small fraction of deaths actually due to the heat wave, such as those resulting from heat strokes. Many per-

sons who are frail by reason of advancing years, who have high blood pressure or who are ill from other conditions actually die because of the heat; yet age or the disease condition from which they were suffering receives the blame.

Some critics say that in hot summer days the change is too sudden to go from a house, a theater or any other building in which the air temperature is from 68 to 70 F. to the outside air, where the temperature may be from 80 to 100 F. They even speak of shock resulting to the body. There is no evidence to prove that the body receives any shock from such a change or that any harm whatever results.

Although much more evidence could be cited concerning the ill effects of overheated air, it would appear that enough has been given to answer the question, "Why condition the air?"

The opposite extreme of temperature is probably even more detrimental to health than heat, since the fact is now well established that cold air has a deleterious effect on the human body both in health and in disease. On ordinary respiration we inhale approximately from 400 to 500 cc. of air with each breath. When we consider that we breathe about 25,000 times every twenty-four hours, it is obvious that a great deal of energy is required and a great load is thrown on our bodies to heat this amount of cold air to body temperature. This is a heavy load for the healthy person, to say nothing of the one who is ill. Is it not paradoxical to construct excellent homes from fine materials, to attempt to reduce the leakage of air about the windows and doors with special weather stripping and even to provide storm windows, only to throw them wide open during sleeping hours? During and following cold waves, the human family frequently experiences severe epidemics of common colds, influenza or grip. Colds produced in this manner often lead to sinusitis, pneumonia, chronic bronchitis and other serious diseases of the upper and lower respiratory tract. At one time, persons suffering from pneumonia were treated in cold air. In fact, at present some patients receive such treatment; but the time is not far distant when this will be looked on as a relic of barbarism. During the World War it was shown that the mortality was almost 14 per cent among those pneumonia patients treated by the cold air method, whereas among those who were treated under normal room temperatures it was only 3.2 per cent.

THE old method of treating tuberculous patients in extremely cold air has been practically abandoned. While the bed was often placed on an open porch, in reality the patient's body was in conditioned air. Heat provided by electric bulbs, hot water jugs or electric pads as well as that produced by the body kept the air inside the bed at a comfortable temperature. Thus, many patients avoided disaster. When artificial heat was not provided, huge numbers of blankets were required. One sanatorium superintendent from a state in the northern tier found a patient with forty blankets on his bed on a cold winter night. The weight of the bedding alone was sufficient to cause fatigue. Not infrequently patients found it necessary to sleep with their faces under the covers in order to prevent freezing of the skin. Even this was far better for them than to inhale the bitter cold air. Dr. Lawrason Brown recently said, "This brings up the problem of treatment by exposure to fresh air. I question whether the too prolonged exposure of weakened or, indeed, of any patients to chilly or cold air may not defeat the very purpose at which we aim, the stimulation of the patient. I am sure that in the future this part of the treatment will be revised as much as the diet has been changed during the last twenty-five years."

IN THE treatment of common colds, pharyngitis, bronchitis and other such respiratory diseases, cold air is a detriment. These conditions respond much better to treatment when the patient is permitted to breathe air that is properly conditioned, that is, slowly circulating air with a temperature of approximately 68 to 70 F. and with the proper humidity, than they do when the patient is allowed to breathe cold air; in fact, cold air often prolongs the condition, increases such symptoms as cough and predisposes to complications, such as pneumonia.

The humidity of outside air when brought into a building is rarely satisfactory. When outside cold air is brought into a building and heated, it expands. This markedly increases its capacity for water; therefore, unless moisture is supplied, the air becomes extremely dry. It takes moisture from furniture and from every other possible source, thus causing considerable damage. It even attacks the body, causing a drying of the skin and in some cases resulting in winter itch. The inhalation of such dry air has a harmful effect on the mucous membranes of the respiratory tract. Air with low humidity of from 5 to 10 per cent, such as is frequently found in buildings during the winter months, must be much warmer than properly humidified air in order to make the body comfortable; therefore, it is not uncommon to find in houses and apartments that the air is maintained at a temperature of from 80 to 90 F. during the winter months. When the temperature is reduced, the occupants feel chilly. However, when moisture is added so that there is a relative humidity of from 40 to 50 per cent, the air is comfortable when the temperature is reduced to 68 or 70 F. Therefore, adding moisture to the air results in a great saving of fuel. In summer the humidity of outside air often is far too high. It is usually this humidity which causes us to suffer so much from the heat of sum- *(Continued on page 42)*

THESE TEETH OF MINE

Chapter I

SAVAGE TEETH

By
DAVID W. McLEAN

THE PATIENT sighs with relief. The cavity is ready for filling; the drill has been laid aside. The dentist has turned to his cabinet to begin preparations for taking the impression. The possibility of being hurt is past. For the moment deeply interested in things dental, the patient is ready to philosophize on teeth and their shortcomings.

"O dear," she sighs. "These teeth of mine! Why is it, Doctor, that people have so much trouble nowadays with their teeth? Twice a year to the dentist, and always cavities to be filled. When I was a child we certainly didn't spend as much time at the dentist's as my children do. I almost wish I had been born a savage, so I might have had good teeth."

THEN the patient settles back comfortably in the chair prepared to enjoy with mild self pity a dissertation by the dentist on decadent modern living, our artificial lives and unnatural diet.

The belief that savages had perfect teeth is popular but fallacious. The superman of the past suffered from the same dental ills as does modern man. Exhumed prehistoric skulls give evidence of dental decay, or caries, of pyorrhea, abscesses, and crooked and worn teeth. (From E. A. Hooton's "Up from the Ape," by permission of The Macmillan Company.)

The belief that savages had perfect teeth is more than merely popular, it is universal. The city dweller in particular is likely to picture a more natural life in far places or earlier days, a life free from the complexities which jangle the nerves and fatigue every faculty and tissue of the body. Life would be simple in the calm of mountains or rolling plains with no clock but the sun and no pall of smoke to cut off the sun's ultraviolet rays.

Most of us harbor in some corner of our minds dim recollections of the stalwart savages of J. Fenimore Cooper and wish we could enjoy such lives of freedom as they lived and know such rugged well being as was theirs. Perfect teeth, of course, would be one of its by-products.

A layman recently told me about an old Indian skull he had seen, unearthed in one of the ancient burial grounds. It had, he explained, "double teeth all the way round." He asked whether I ever saw any one nowadays with such a set of teeth. I could sense his enthusiasm for a life so wholesome that the savage who lived it just naturally grew nothing but double teeth!

"Were the grinding surfaces of the teeth flat?" I asked.

Yes, they were flat. Some were even concave. I hesitated to disillusion him. He had been admiring a worn-out set of teeth, worn down to where the front teeth, circular, broad and flat, looked to the layman like double teeth. This savage skull was exceptionally sound.

IN VIEW of the modern belief in the importance of diet and vitamins in the development and maintenance of bony structures, including teeth, great interest has attached to the unearthing of skulls many thousands of years old. Here surely, we thought, we would find perfect teeth, for the first American was an outdoor man; he had never eaten sugar or white bread and had never seen a can opener. He had not worn wool clothing and had never dodged automobiles or breathed their carbon monoxide halitosis.

Examination of many exhumed skulls has shown, however, that the superman of the past suffered from the same dental ills as you and I; the same decay, pyorrhea, abscesses and "crooked teeth."

In Mexico I recently saw the skull of an Aztec nobleman whose upper front teeth had been

adorned with inlays of black obsidian glass. The artisanship was quite as good as that shown by many inlays today, but it was artisanship only. Purely decorative in purpose, the operation was not based on any scientific knowledge. One tooth still retained its black, shiny inlay; an adjoining tooth had only the empty cavity, conical in form, drilled into the sound dentin and straight into the "nerve" or pulp chamber of the tooth. Death of the pulp and an abscess would, of course, follow such treatment, and one of these front teeth showed a large hole around the end of the root where the bone had been destroyed or "eaten away" by an abscess. Two of them had been lost entirely, and the sockets had healed over; there was an advanced condition of pyorrhea. All the teeth were badly worn.

This was one of a few instances of constructive dentistry among early Americans. The Aztec could hardly be classed as a savage; bone surgery in one of the skulls I examined testified to his advanced civilization. However, the early period in which he lived makes him eligible for mention here. Few savage skulls have filled teeth, but most savage skulls do show decayed teeth, pyorrhea and often such excessive wear as to render the teeth useless for efficient mastication.

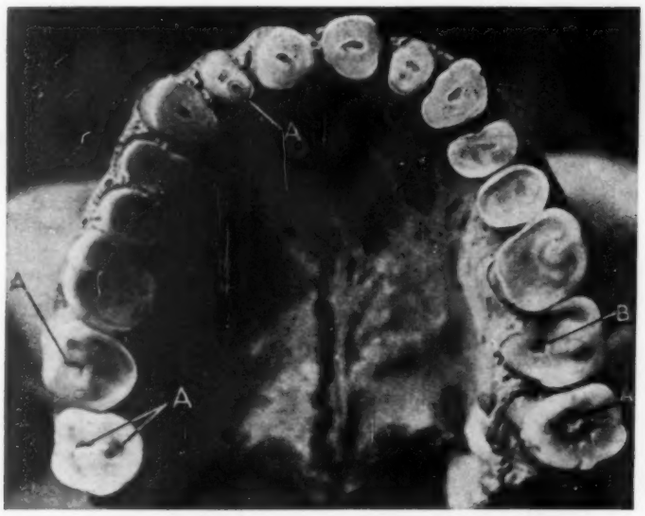
THE layman, seeing a large number of teeth biting closely when the jaw is closed at rest, thinks, "What a splendid chewing machine!" This is not necessarily true, for during chewing operations the jaw closes not in the center but at one side. It then swings across through the center to the opposite side. The grinding surfaces of the back teeth are studded with cusps or peaks, with valleys between. As the jaw slides across, the peaks of one jaw glide through the valleys of the other jaw to do the cutting. The cusps are the blades of the dental shearing machine. All the teeth may be present, and yet the blades may be missing. The back teeth can then only crush or pound; they cannot shear the fibrous food which makes up so large a part of our diet. The flat tooth is a crippled tooth!

The visible portions or crowns of teeth are covered with enamel, the hardest animal substance. It is thicker on the biting surfaces and thickest on the peaks of the cusps. Nature evidently intended tooth enamel to last a lifetime, but nature failed to take into consideration one article of diet, grit.

CONSIDER the case of the early Pacific coast Indians. Although there were, so far as we know, no booster clubs or chambers of commerce to laud the Land of Sunshine, the tribes of those early days undoubtedly enjoyed the same abundance of ultraviolet radiation which Californians value so highly today. Theirs was an outdoor life. They were the forerunners of the nudist cults. Their diet was a healthful one, consisting principally of fish, grain, nuts and vegetables. According to 1935 model health theories, they should have had marvelous teeth. Yet scientists, digging in the haunts of those tribes, bring up skull after skull with "double teeth all the way round" which are in reality worn-out teeth.

Many of these skulls belonged to individuals under middle age! It would seem from the large number of younger people whose skulls show worn-out teeth and whose bones show an absence of other causative factors of death that the destruction of their chewing apparatus must have at least played an important part in their physical breakdown. In the same two ways, through infection and the lack of chewing efficiency, the deterioration of the masticatory apparatus breaks down modern man. This is a startling thought! The infection we are ready enough to concede; but could inability to chew

The skull of an Aztec nobleman shows the upper front teeth adorned with inlays of black obsidian glass, highly polished and beautifully set; but of the six "decorated" teeth, only two have survived. One tooth still retains its black, shiny inlay; an adjoining tooth (A) has an empty cavity, which was drilled into the sound dentin and straight into the "nerve," or pulp chamber of the tooth. (From the Museum in the Casa de Alfēnique, Puebla, Mexico.)



The chewing surfaces of the teeth of this early Pacific coast Indian were worn to and beyond the original level of the pulps. The dark spots in the centers of the teeth indicate where secondary dentin has been formed to protect the pulps. Decay has started in several teeth (A), and the pulp of one tooth has been exposed (B). (From the collection of Dr. Spencer R. Atkinson.)

be really a factor in the deterioration, perhaps the very elimination, of an entire race?

How important is chewing? Fletcher of "fletcherizing" fame insisted that it was all-important. Others better qualified to judge have agreed with him. Others quite as well qualified have claimed that food, especially meat, is better digested when it is bolted without chewing. Some fairly recent investigators had individuals refrain from chewing for a few days; when tests showed digestion and absorption going on as usual, they claimed that chewing was quite unnecessary.

Once a colleague and I were conducting some experiments to show the difference in chewing efficiency between good teeth, worn teeth, bridgework and plates. The tests were to be based on the average person's normal chewing time. How long was that? We did not know. Neither did some of our friends. So one day we took a stop-watch with us when we went into a restaurant.

When some one at a neighboring table, all unconscious of his contribution to science, placed food in his mouth, the watch was started. When he swallowed the major portion of it, the watch was stopped. The diners in our part of the restaurant were thoroughly observed and clocked. The chewing time ranged from four to ten seconds.

I was dumbfounded. If so many persons did so little chewing, one of two things must be true. Either their teeth must be in extremely efficient chewing condition to do the work so quickly, or chewing was not so important after all. The evidence of the stop-watch apparently contradicted the evidence of the savage skulls. The hasty chewers we had clocked were bundles of energy; they talked as they ate, or read newspapers, and it was quite evident that they were hustling about their affairs with no time for leisure or chewing.

I did note, however, that two of the diners surreptitiously slipped pills into their mouths before leaving the table. One man at our own table took from his pocket a bottle; he carefully drank the water from his glass until he had just half a glass left. He then poured in a spoonful of medicine and, after stirring it thoroughly, drank it.

The test lies not in the observation of a few individuals over a short period of time. Really authoritative investigations should extend over the major portion of the subject's life and should cover many individuals. Such investigations have still to be made, and we must turn to the animal world for observations which might reasonably be expected to confirm or contradict the evidence of the skulls.

The dairyman knows that cows pastured in sandy fields wear out their teeth and early lose their productiveness. In western Arizona the soil is sandy and the grass short. Sheep there wear down their teeth at an early age. Sheep graze close to the soil; where the grass is scant, they bite into the soil after it and take it root and all. There are two results: They ruin the range for other cattle, which accounts for the feuds between sheep men and cattle men, and they ruin their own grazing equipment. They wear their teeth down to the gum just as tobacco chewers often do. Such sheep cannot be kept in the best health or fattened well for market. The native sheep of those regions are small, scrawny and hard to sell.

A HORSE which becomes thin and "poorly" will often be found to have one or more teeth projecting beyond the others. The veterinary files down these teeth with a rasp, an operation known as "floating" them, so that chewing can be resumed; and shortly the horse regains good health and form.

Some pictures of the slave mart in America before the Civil War show the prospective buyer looking into the mouth of the slave he contemplates buying. It was not a matter of theory with him; however guilty he might be with regard to his own mouth, he would not consider it a good investment to purchase a Negro whose teeth were not in fairly healthy and efficient condition.

The early Pacific coast Indians ground their grain in stone mortars, or metates, with stone pestles. Not only did they have portable metates, which have been unearthed throughout that country, but where they stopped for any length of time, mortars are found worn into large boulders; sometimes there are several in one large rock. I stumbled on one not long ago in the mountains of Riverside County in California. A giant overhanging boulder, marked

with picture writing, probably depicting a route of march, and scarred by the smoke of many fires, challenged my attention. Apparently the Indians were wont to camp there on their seasonal march from the mountains to the valley and coast. Above and in back of this rock was a smaller one with a grinding mortar, probably 5 inches across and 8 inches deep, worn into it.

How clearly the picture rises before me. Below in the shelter of the big rock was the chief's tent, the warriors seated about the fire in grave discussion of the causes of the depression, children at play on the little mesa beyond, others fishing in the creek below, and back out of sight the patient squaws grinding, grinding, grinding maize into flour. It must have taken many weary hours of grinding to wear so deep a hole in so hard a boulder.

What of the particles of stone which wore away as the hole grew deeper? They went into the flour, into the bread and into the mouths of the Indians. Nor was that all. The green leaf vegetables were probably no better washed than is most restaurant spinach. Much of the fish was dried in the open where dust and sand blew into it. When a Pacific coast Indian clamped down on a morsel of dried fish, it was literally true that "another redskin bit the dust!"

So into a great portion of their diet was incorporated grit, from the stone in their cereals, from the ground in their vegetables and from the air in their dried foods. Small wonder that their teeth were worn down at an early age and often made useless for mastication.

While worn chewing surfaces of teeth are usually far less sensitive than would be expected from their appearance, they often foster decay or wear close to the pulp, thus becoming sufficiently sensitive to cause even a stoic warrior to select his food with care and to chew it softly, if at all.

There are some interesting points about the wear of teeth. We are continually wearing out all parts of our bodies; but whereas other cells or tissues are constantly being renewed, worn-out teeth cannot be rebuilt by nature. Once worn, broken away or cut away by the dentist, tooth tissue is gone forever; nature has no mechanism for rebuilding it. It must be replaced by substitution of foreign material. Nature's effort is spent in hardening the dentin and protecting the pulp, or so-called nerve, by calcifying its outer portion into dentin.

Often wear or decay proceeded so fast that the pulp of Indian teeth was exposed before nature could protect it with new dentin. The pulp then became infected and inflamed and then died, with an abscess as the end-result. Often the exposed pulp died a slow death, and mastication ceased in that vicinity until its demise. After biting once on such a tooth, the hardiest warrior would chew no more in that neighborhood. As a boy, I once saw a farmer suffering so intensely from such a condition that he held a cold chisel against the tooth and struck the chisel with a hammer. The blow killed the pulp and gave him relief. He thought that his troubles were over; but as we now know, the result of such treatment would be an infected tooth from which poison could enter the body to become the cause of serious disease.

Another result of excessive wear, coupled with lack of mouth hygiene, was the great prevalence of pyorrhea among the aborigines, for teeth do not wear evenly. When any two surfaces are rubbed across each other, some areas get more wearing contact than others. Lens makers take advantage of this fact, and by rubbing two flat pieces of glass across *(Continued on page 90)*

Where the early Pacific coast Indians stopped for any length of time, grinding mortars are found worn into large boulders. Small wonder that the savage's teeth were worn down at an early age and often made useless for mastication, for the particles of stone which wore away as the holes grew deeper went into the flour, into the bread and into the mouths of the Indians. (Courtesy of Dr. D. J. Engholm.)

The New Generation

By WINGATE M. JOHNSON

I BELONG to the middle generation, which Elmer Davis has so delightfully described as "the dutiful and damned," because we were caught between the upper millstone of filial regard taught in our youth and the nether millstone of the modern teaching that all misconduct in children is the fault of their parents. As Mr. Davis said in *Harper's Magazine* for August 1929, "we happened to be the last of those who were blamed for their own shortcomings, and the first who had to take the responsibility for what was done by their successors." It is hard to be held responsible for so much; yet when any decided innovation takes place, somebody has to suffer. Ask a dweller in a modern, paper-walled apartment with a dozen radios in easy ear-shot whether this is not true; or ask any of the victims of "technological unemployment."

After all, there may be some balm in Mr. Davis' Gilead. The modern idea that children are what their parents make them should be retroactive and hence should excuse those of us who have not exactly molded the world to our heart's desire. And unquestionably a goodly number of parents who should be staid and sober are anything but models of conduct for the younger generation to follow.

Although my hair is rapidly getting grayer and thinner, and I have long been seeking excuses to stay at home nights rather than go out, my sympathy is chiefly with the younger generation. It has been so hard for them to keep in the straight and narrow path beaten by convention. Unlike Dickens' Mark Tapley, whose ambition it was to be jolly under trying circumstances, the younger generation may reasonably aspire to be serious against odds, for only jollity is expected of them.

From the earliest Babylonian inscriptions, as almost every one knows, the perversity of the youngsters has been bewailed and there has been loud lamenting over the good old days that are no more. The immortal Mrs. Grundy, the personification of public opinion, can never be satisfied with the doings of the young folk. Let us consider some examples of the unreasonableness of the old lady and her numerous family.

THERE is the matter of clothing. In my childhood, young women were berated for wearing dresses so long that they swept the streets, bringing germs by the billions into the houses. No sooner had the revolving wheel of time brought into fashion the short skirt than Dame Grundy complained that there was no more modesty in the land. When ladies prided themselves on their slender waists and laced so tightly as to squeeze their livers out of shape,

WHO DOES NOT REMEMBER THE FAT, WHEEZY, ASTHMATIC DAME WHOSE ONLY EXERCISE CONSISTED OF SHORT WALKS WITH HER FAT, WHEEZY, ASTHMATIC POODLE DOG?

corsets were attacked bitterly. Later, when athletic girls discarded their armor plate, they were denounced just as heartily.

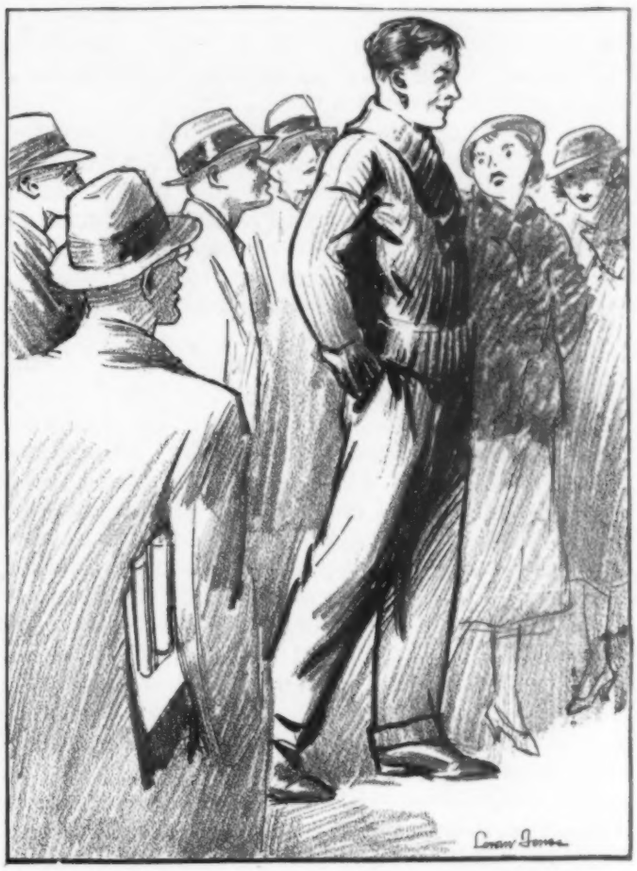
There is also the subject of smoking. I am not entering the lists as a champion of tobacco; but in order to keep history straight, I beg to remind the Grundy family, who so bitterly object to smoking by women, that our grandmothers and great-grandmothers enjoyed nothing more than their long stemmed clay pipes, smoked by the fireside. Their silver hair gave them immunity from outspoken criticism; yet wherein is the humble cigaret so much more objectionable than the pipe?

As a physician, I have nothing but condemnation for the fad of dieting when it is pushed to a ridiculous extreme; but like many other faults, it is the shadow of a virtue. Who does not remember the fat, wheezy, asthmatic dame whose only exercise consisted of short walks with her fat, wheezy, asthmatic poodle dog, and who kept a box of chocolates by her easy chair to munch while she read or rested? Any amount of skinniness is a welcome change from such a figure and such self indulgence; and while the flapper who denies herself ice cream sodas and candy in order to keep thin is showing heroism worthy of a better cause, there is nevertheless a certain amount of wholesome discipline in the experience.

Members of the new generation, moreover, are entitled to sympathy because they have so much more in the way of temptation than did their elders. The multiplied luxuries of life have done much to make living more complex and to add to its problems. Never has there been less outward respect for the law. Prohibition made drinking fashionable among the smart and would-be smart set. Too many of the self admitted intelligentsia delight in ridiculing the sanctity of the home and of the marriage relation. It is unfortunately true that entirely too many young, and even middle-aged, married couples set an example that is anything but inspiring to the younger set.

THE orgy of extravagance that ended abruptly in October 1929, certainly did not provide a wholesome atmosphere for the generation in question. It was not good for the soul to have the idea that riches grew on trees and that all that was necessary to become wealthy was to buy almost any stock on margin and then watch it go up and up like a rocket until it burst into a golden shower of extra dividends and stock dividends.

The present educational policy is another reason for extending sympathy to the new generation. Most present-day teaching in America is too superficial. Instead of providing the minds of students with the training that comes from wrestling with real problems, the effort is made to make education as easy as possible. Because



THE GREAT EMPHASIS THAT HAS BEEN PLACED ON COMPETITIVE ATHLETICS, ESPECIALLY FOOTBALL, HAS PUT A TREMENDOUS HANDICAP ON THE YOUNGER GENERATION.

the classics are hard to master, they are being abandoned in favor of the easier vocational subjects. More and more the elective system is being extended, in order to let so-called students play football and graduate. Higher education, such as it is, is being overdone. As James Truslow Adams said not long ago, since the democratization of education the college textbooks have to be written in simplified language. He added that even at Harvard a professor no longer dared tell his students that a king was crowned, lest they think His Majesty had been knocked in the head.

The great emphasis that has been placed on athletics, especially football, by nearly all our institutions of higher learning has put a tremendous handicap on the younger generation. When the players as well as the students observe their elders not only winking at, but brazenly scheming to evade, the code of honor which binds their alma mater; when they see hard fisted coaches bullying young men from refined homes; when they are forced to realize that the whole world of education has apparently gone mad on the subject of athletics, is it any wonder that their youthful ideals are lowered, if not hopelessly lost? When high school students note that year after year the lads with athletic records are eagerly sought and well paid to be play boys for four years more,

while nobody, seemingly, gives a tinker's dam for the high honor man in the class, can they be blamed if the only Latin that sticks in their memory is *cui bono?*

The literature that has been popular since the World War has certainly not helped the younger generation to keep their thoughts pure. Many of the present-day writers are little better than literary pimps, who make money by pandering to the lusts of their readers. Moreover, the majority of motion pictures can hardly claim to be of the uplifting variety.

The wide dissemination of garbled ideas about psychology and psychiatry, particularly "repressions," has been another handicap to young people. Too many of the young and not-so-young have formed the mistaken idea that wholesome self control is the same thing as harmful repression. Behaviorism is, happily, now declining in popularity since its chief exponent left his professor's chair to become, fittingly, an advertising expert. It relieves the individual of all personal responsibility for his conduct and blames his environment instead.

YET with all these handicaps against them, members of the new generation have developed some admirable qualities. They are learning to think for themselves in a manner that would have been almost impious in the last century. At least one scriptural injunction is implicitly obeyed by them: to "prove all things," although I fear they do not always "hold fast to that which is good." The mere fact that a custom has been followed for a century means absolutely nothing to these young folk. "What of it?" is almost a motto with them. It is this spirit of wholesome skepticism, combined with intellectual curiosity, that has inspired some of the world's greatest discoveries, including the country in which we live.

Never before, in the history of the world, has there been such an opportunity for symmetrical development, physical, mental and spiritual. The fact that many of the younger crowd do not care to avail themselves of their opportunities does not keep the vigorous minority from doing so; and, after all, it has always been the thinking few who have led the way in the world's achievements.

One hears much about the smoking, drinking, "petting" and general cussedness of the new generation. I wonder, however, if there is not more drinking done by the generation just ahead of the one that is now called new. I refer to the younger married folk and some not so young. A few days ago, for example, I heard a 19 year old girl remonstrating with her middle-aged mother for taking too many drinks.

It is one of the compensations of a family physician that he is a sort of honorary member of various families and often has an opportunity to get closer to some of the younger members than has the minister and sometimes even closer than the parents. It seems to me that there are as many or more straight thinking, manly youngsters of the type of Larry Foster and his "girl" than there are of the drinking, roistering kind. There is certainly less hypocrisy among them than among their elders; there is less cant; there is less respect for mere authority but more for reason.

THERE is only one thing about the new generation that makes me pessimistic. That is the "greater freedom of the sexes," which offers far greater temptation to boys than was formerly the case. Once looked up to as finer, nobler and altogether more respectable than the male, the female sex has deliberately stepped down from the pedestal. In demanding her rights, woman has given up far more valuable privileges; and worse still, she has much to answer for in offering to the opposite sex the most subtle and insidious temptations imaginable. It does not take an especially strong character for one boy to refuse a drink offered by another boy; but when it is offered by a girl, it is infinitely harder to refuse. When the rôles nature intended for each sex to play are reversed and the female becomes the sexual aggressor, the temptation to the male is tenfold stronger. There is something about the nature of a boy that rebels against being considered a mollycoddle or a sissy.

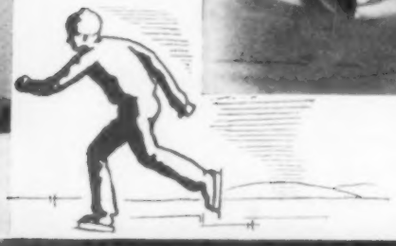
It is easy enough for the older generation to moralize that strength of character is all that is necessary to overcome such temptations; but it is hard indeed for a boy to emulate the example of Adonis when a sufficiently attractive Venus comes along. The old-fashioned double standard of virtue was open to criticism, but it was preferable to no standard at all, seemingly the ideal of many of the liberals among the fair sex. There is something of pathos in Chauncey Depew's famous toast to woman, as "once our superior, now our equal." In the attainment of this equality, each sex has forfeited some respect from the opposite one; but it is the gentler sex that has surrendered the most.

Even this cloud of pessimism, however, may have its silver lining. Undoubtedly the old Victorian teaching that sex was something "not nice" and something that no decent girl would think about has been responsible for its quota of divorces and for more than one unhappy marriage. It is perhaps no exaggeration to say that the great majority of women reared during that era entered married life totally unprepared for its responsibilities and with the feeling that it was unwomanly even to discuss the physical side of marriage. Assuredly, whatever else may be said of the present younger generation, they should be far freer from the old puritanical ideas about sex than were their forebears.

"Winter Comes to Rule the Varied Year"

W. Gabi

Underwood and Underwood



O. Hari

Herbert Photos

The Making and Unmaking

WITHIN a few months we moved into a large four story building where we could have the room and the facilities for handling a business that threatened to grow out of hand. The enterprise would have met disaster in the confusion of its mushroom development had it not been for the far-sighted management of Duggins whose ability to plan and to organize was an amazing revelation to me. Where he picked up his knowledge of business detail I could not imagine; surely he had not acquired it by teaching a country school and hardly by wrestling with boxes and barrels in a freight house. Since those days I often have thought that had Duggins applied his inherent talent to a cause of higher purpose than the quack medical game, he might have been an outstanding figure in the business world.

We depended almost solely in our operations on vicious collect-on-delivery coercion which, for brazen audacity, has never been equaled by any other hold-up scheme in the annals of banditry. There were other medical companies of the same ilk in the field; but for some reason, probably the blatant note of assurance we had struck, we seemed high in popular favor. If we were more successful than they in making the game pay, it was because of the greater persistence and higher pressure we put into our efforts. The names of the sick were all we needed to start the production of remittances. Given these, we laid down a barrage that was continued relentlessly until the owners of the names either acceded to our demands or proved their immunity to deception, entreaty, fear and bulldozing.

To make clear our modus operandi, let me discuss a single case of the hundreds of thousands that fell into our clutches. The sufferer, having read our advertisement, would ask for a sample of medicine and information regarding treatment. Immediately we forwarded the sample as we had promised to do and then, after a brief delay, we sent him a letter, bearing the signature of Dr. Bill. In this letter, Dr. Bill presumably announced that he had been deeply interested in the unusual features of the sufferer's case, so much so that he had made a special study of it. Dr. Bill would then offer the professional opinion, based on the symptoms that had been submitted, that the sufferer was the victim of a certain disease which, although not necessarily fatal, was extremely serious unless treated promptly and scientifically. So great had been Dr. Bill's interest in the welfare of the sufferer that he personally, at great expense, had compounded in his modern laboratory a medicine which certainly would effect a cure.

Realizing that the sufferer's condition called for immediate attention, a package of this medicine was being forwarded by express, C.O.D., in the expectation that the sufferer would accept it and pay the nominal charges.

If the sufferer received and paid for the first package, he shortly received a second one, also C.O.D., accompanied by a letter in which Dr. Bill gave assurance that he was watching the case closely and advised a continuation of the treatment. If the sufferer accepted the second package, he later would get a third one, charges collect, with a letter warning him against discontinuing the medicine before the disease had been thoroughly conquered.

If the addressee of a C.O.D. package neglected or refused to accept it, he was straightway made the target of follow-up letters designed to break down his sales resistance. Pending the outcome of the assault, the medicine was held at destination by the express company. A recalcitrant prospect was warned that in his precarious condition, delay imperiled his life. At no time was he permitted to forget "the deadly germs that lay dormant" in his body and would surely

# of a Quack PART II

HE WANTED TO PLAY AND WORK LIKE THE OTHER BOYS OF THE TOWN. THESE BOYS WERE GOOD TO HIM, HE WROTE, AND OFTEN HELD THEIR GAMES NEAR HIS MOTHER'S HOUSE SO HE COULD WATCH THEM; BUT OF COURSE THAT WAS NOT LIKE PLAYING WITH THEM.

By JEAN BRODERICK

get him if he didn't watch out. Running through all the follow-ups was the idea that the sufferer, by merely asking for a sample and describing his ailments, had placed himself in Dr. Bill's care and was under sacred obligations to him. It also was hinted that any one who failed to appreciate the time, the money and the study that had been expended on his case was guilty of gross ingratitude. When every other appeal had been tried unsuccessfully, the sufferer would be notified, in legal form suggesting recourse to the law, that the express company held a package for him on which the charges were unpaid, as though failure to pay were a crime. But the law was a sleeping dog which the C.O.D. artists did not wish to disturb, so no one was sued.

I remember receiving an intensely profane letter from an Ohio man who was so unreasonable as to become incensed over one of our generous offerings. In blasphemous language he called Dr. Bill a fraud. Business policy would not permit such a baseless charge as this to go unchallenged. Writing for Dr. Bill, I advised this man that I was shocked that one of his standing should so far forget himself as to send a scurrilous and libelous letter by United States mail. But with charity for those who are sick and in the hope of hearing further from him on the subject, I was holding his letter in abeyance before turning it over to the postal authorities. He apologized abjectly to Dr. Bill and paid the collect charges of $15 for the package which the express company held in escrow.

Perhaps you think you would not have submitted to the highhanded tactics we employed. Probably not you, but many did. Here are some interesting statistics that Duggins compiled showing how successful the plan was in getting the money. Of those to whom medicine was first sent, without their order for it, 27 per cent accepted the packages and paid the charges. Of the 27 per cent, 15 per cent took up and paid for the second packages sent them, and of these, 5 per cent accepted and paid for the third packages. What profit this percentage of acceptances brought to the company I shall show later.

If you have access to the files of your home town newspaper and will consult those of about the year 1900, you probably will find advertised therein the great Dr. Bill Medical Company, recognizable by the extravagance of its promises and the wonder of its cures, but not by name. If you have found a Dr. Bill advertisement, you will observe in it, after glowing tribute is paid to the genius of Dr. Bill, the impressive announcement that in his great humanitarian work he is ably supported by "a brilliant medical staff of internationally known specialists." Therefore I shall reenter this narrative as an internationally known specialist—I, the former salesman of electrical equipment, who probably thought at that time that pathology had

MY RECORD OF 380 DIAGNOSES IN TEN HOURS IS, I BELIEVE, A WORLD RECORD AT WHICH MEMBERS OF THE MEDICAL PROFESSION MAY CARE TO SHOOT, IT BEING UNDERSTOOD OF COURSE THAT I ESTABLISHED IT WITHOUT PAINS OF ACCURACY OR FEARS OF CONSEQUENCE.

something to do with road making and that Hippocrates was the name of a running horse.

With the business now moving in high gear, the services of seventeen men, including myself, were required for the work of a department that I had nursed in its infancy. The game had given me a number of surprises, but none startled me more than the announcement that this crew of nondescript adventurers was being advertised as a brilliant medical staff of internationally known specialists. I suppose by right of tenure I was dean of the staff, but this self eminence brought me neither honorary degrees nor notable emoluments.

We who composed this staff were on the payroll as diagnosticians; but by a majority in the organization, who possibly had difficulty in pronouncing that term, we were called doctors, a name which really was more in keeping with our dignity as specialists. Perhaps your imagination will lend a word that could have been applied more appropriately to us. However there is no gainsaying the assertion that this staff was the main cog in the machine, for on our dexterity and cunning depended the success of the business. To us was put the task of passing quick judgment on the ailments of the sick, but the system in force was such that one could learn to do this in two or three lessons. To circumvent years of tedious study, hospital training and experience in practice, we were provided with work-sheets which made doctoring so easy that a child could have grasped the fundamentals and been equally as successful as we were in arriving at right conclusions. A glance at a work-sheet told the diagnostician what disease an inquirer might have according to the symptoms he had given and also what medicines should be prescribed to fit the disease. When a patient advised us of the diagnosis his physician had made, we generally added a disease or two so that the sufferer would understand that we were more observant than his physician.

Picking diseases and medicines off a work-sheet was mere routine. To qualify as a diagnostician, one had to possess speed and the ability to tell by the "feel" of a letter what the writer would and could pay for medicine. The writing paper, the penmanship, the wording and the confessed anxiety guided the diagnostician in making his appraisal. Naturally, those who were palpably seriously ill rated higher as prospects than those who merely recounted trivial ailments. Of course the Dr. Bill company had no fixed schedule of prices for its medicines. Our lowest charge on any C.O.D. package was $3. There was no established top price, although $100 occasionally was obtained. A demand of $50 frequently was made. It was the diagnostician's duty to levy the assessments, and his value to the company was determined by the volume of his acceptances. If he had reason to suspect that a man who had asked for a sample and information was affluent or suffered from a disease of unpublishable nature, a commercial rating was obtained before the price was fixed on the medicine.

But no matter what the diseases and the charges attached to the C.O.D. packages, all applicants received the same quantity and value of medicine. According to the calculation of Duggins, the average cost of the medicine in the packages was 3¼ cents. When it is considered that seventeen fast workers kept the C.O.D. packages going out in a constant flow and that of the first ones alone, 27 per cent were paid for at an average price of $8, a conclusion regarding profits is possible. Duggins used to tell us that were it not for the money he spent in getting names we all would shortly be millionaires. When names failed to come in fast enough from our advertising to keep us busy, he would buy "sucker lists" from other "medical" companies; but these did not prove as productive as those obtained first hand. At a later date the company offered for sale 1 million names which had been "worked."

I would not have you think that I was the only specialist on Dr. Bill's brilliant medical staff. Other members of it were equally as well qualified as I to give professional counsel. As this staff was always in flux, I could not at any time have identified all its members or pointed out the qualifications of more than a few. The tramp medical men caused frequent changes in the personnel. Seemingly their code demanded that on the first pay day a part of them should get drunk and the others should move on to the next medical company. Many beginners soon dropped from the ranks because of their timidity. To keep the pace, a diagnostician had to have daring. Among the standbys on the staff I recall a former bartender who was a specialist at mixing fancy drinks, a former gambler who was recognized almost internationally as an expert with the "three shells," an exreporter, an exbookkeeper and a drug addict whose efficiency fluctuated with the amount of dope he had in him. Of my own fitness I have spoken. So you see we were specialists of sorts, although I suspect we were not known internationally except in Dr. Bill's advertising.

It would have been impossible for seventeen men, no matter how adept, to have given individual attention to the letters received. However, the company represented that Dr. Bill could and did do it. All that saved us from falling irretrievably behind in the work was the use of forms, prepared in blank so that the typists could write in the names, addresses and diseases as we directed. All forms, and also the individual letters we occasionally wrote, were couched in the first person; as Dr. Bill's name appeared as signature on all of them, patients believed that he was speaking personally and intimately to them. As a matter of fact, Dr. Bill did not see any of the inquiries and had absolutely nothing to do with the diagnoses. He was being paid a good salary as custodian of the diploma, and his responsibilities did not extend beyond that position.

One day Duggins requested that I go to work at 7 o'clock in the morning and keep a record of the cases, or letters, I diagnosed in ten hours. Thinking he was trying to fix a standard by which service on the staff could be measured, I readily assented. At the end of the ten hours I had taken care of 380 cases. That means I had read communications from 380 persons, assigned a disease, or diseases, to each, indicated what each should be charged and made out orders for the medicines that were to be sent to all of them in the first C.O.D. packages. Afterward I learned that another member of the staff, who was supposed to be in my class for speed, had worked under identical instructions and had closed the day with 378 diagnoses. It developed that Duggins and a friend had a wager as to whether my fellow diagnostician or I was the faster worker. By the narrow margin of two cases I had won $50 for Duggins, and for myself I had gained the ignominy of being a "swift" at the game. My record of 380 diagnoses in ten hours is, I believe, a world record at which members of the medical profession may care to shoot, it being understood of course that I established it without pains of accuracy or fears of consequences.

Within only a few months, more than 500 men and women were employed solely in looking after the company's production of C.O.D. packages. We did not manufacture anything else. The medicines came to us in hogsheads, barrels and boxes. Girls in the medicine room filled the "prescriptions" of the diagnosticians. Ten or twelve girls did nothing all day but open letters and start the contents in the proper channels. Two men with carts were kept busy hauling the mail to and from the postoffice. An express company had established a station in the building to expedite the C.O.D. business. About 200 typists were used in putting the finishing touches to Dr. Bill's "personal" form letters. Another force of girls was busily engaged in the card index room where close scrutiny was maintained over all prospects so that none might be disappointed by not receiving a C.O.D. package or form letter on scheduled time. In the front office a considerable force was busy counting the money.

With the increasing business, a change took place in the tone of the letters to us. In the early days the inquiries had been marked with curiosity. Then we had been hearing from many to whom the taking of medicine was a pastime and the quest of a new cure a sport, but the appeals now were laden with anguish. We had succeeded in selling Dr. Bill as a wonder worker. Consequently, we were hearing from the desperately sick, the incurable and the hopelessly crippled. From such as these a medical company such as ours derives its greatest profits. I suppose if I had had in me only the stuff of which quacks are made, I would have been happy in the knowledge that we had struck pay ore in large quantity. Instead, I entertained misgivings. I was asking myself if being a quack was the gay existence I had imagined it to be. The game was beginning to get on my nerves.

Standing with Duggins at a bar, and that is where many of our business conferences and medical consultations were held, I complained of the ugly features of the business. He agreed with me but answered with the hard philosophy that as the sick were determined to buy medicine we might as well get their money as let some one else do so. However, in deference to my feelings he put me in charge of foreign sales, which were made by methods entirely different from those that were used in the United States.

As no medicines were *(Continued on page 92)*

"Occupational Diseases" in Children

The Second Article in a SYMPOSIUM on

FROM THE MEDICAL POINT OF VIEW

By Herbert B. Wilcox

IT IS not only when the child is obviously or acutely ill that the doctor's advice is needed. Unless carefully driven, the best automobile made will run off the road. The healthiest child needs the same careful guidance if he is to make the best of his healthy body.

Students of medicine have always concerned themselves too much about the nature of disease and too little about the science of good health. Therefore not all parents are in the habit of asking advice as to health regulation, and formerly doctors often looked on such requests as unimportant.

Recently the terms "preventive medicine" and "health education" have come to mean more and more both to the layman and to the physician. As a result of this increased interest in keeping well and avoiding disease there has come a great deal of information about occupational diseases, sicknesses that result from poisonous materials worked with or from poor conditions in which work is carried out.

It may be surprising to think of occupational diseases as applied to infants and children. Nevertheless, they do exist and threaten the health during the first decade of life. Eating, sleeping and growing are the three occupations of young children. Learning is, of course, added to the older group.

In the matter of eating, certain dangers may result if the occupation of taking food is not wisely carried out. When parents have provided their children with enough food for their needs, they have not done everything possible for them. There is something more important even than providing them with this food and seeing to it that they take it. One must see to it that they take it in the right way.

Food does the most good if it is taken when one is hungry. Indeed, food is liable to do harm if taken only because it is either time to eat it or because some one urges us to eat it. One feels hungry only when the stomach and intestinal tract are really ready to accept food and use it. Several things are necessary to a good appetite.

First, the stomach must be empty; it must be rested from the last meal. Hunger means here that the muscle wall of the stomach is strong and firm and that it is prepared to hold and churn and mix up the next meal with the digestive juices.

Second, hunger means that the lining of the stomach has been rested and is ready to secrete the digestive juices. Under these conditions the food taken is properly prepared for its further digestion by the intestine, and unless these conditions have been present when the meal is taken, the food is liable to be passed on into the intestine in unfit condition for use.

Third, hunger means that the stomach and the intestine are ready to propel food along the intestinal tract in order that it may be further prepared for absorption and nourishment. If this nourishment is to be successful, the contents of the upper intestinal tract must move slowly and steadily toward the lower portion where waste material is separated from good and prepared for final excretion. If these conditions are not fulfilled, then progress of the food through the body and the digestive processes do not occur normally. The stomach is the leader of the entire process, and unless it does its work first, none of the other organs will do their work.

Lastly, hunger means that the same preparedness is present in the lower intestine and excretion goes on normally. Constipation, therefore, cannot exist if previous digestion has been proper. There is a sort of cycle in this process, because the first symptom of constipation is usually poor appetite. After this comes poor stomach activity and poor digestion.

Good digestion as a whole is greatly aided by regularity. Three meals taken regularly and eaten with appetite are much more valuable than a larger number of meals irregularly taken with indifferent appetite. *(Continued on page 85)*

HEALTH and DISEASE

FROM THE STRUCTURAL POINT OF VIEW

By Miriam T. Sweeny

ONE EVENING I was invited to be a fourth at bridge. It was a "hen party." The husbands of my hostess and her two friends were at bar association dinners or the like. The fact that I had no husband to consider was, therefore, a social asset that evening.

After four rubbers of bridge, we became chatty, and the conversation drifted quite naturally toward children, as all the others had at least one child. The talk was more or less as follows:

"What shall I do about Betsy?" said Mrs. A. "She sticks her stomach way out, droops her head between her shoulders and looks more like a turtle every day."

"Oh, don't worry about her, my dear," said Mrs. B. "She's shy or something. She'll snap out of it if you don't pay any attention to her. But now that we are on the subject, your Betsy couldn't possibly look as strange as my Bobby. He walks just as a bulldog runs, sort of on the bias and with one shoulder under his ear, and he likes himself that way! He seems so perfectly well that I don't think it is necessary to keep nagging him about it. After all, every one tells me he will outgrow it."

"Well if I were you," said Betsy's mother, "I'd make his father shame him into shape. That football hero of yours ought to be able to make him take notice!"

"Now there's my Alice," chimed in Mrs. C. "She's a lazy little rascal. I can hardly get her to move. At the great age of 10 she would rather sit and read than eat! Consequently she looks like the letter S when she does move about and is bored to death by outdoor things. She'll probably be squint-eyed and literary when she grows up. I know she is lazy; but I love to read myself, so I try not to be unpleasant."

As I listened to these indictments of three children by three really intelligent mothers, I thought that even though I had no children of my own, I was qualified to put in my oar, for my job was along this very line.

"I think you all have the strangest notions—sort of cart-before-the-horse ideas," I said. "You can't work with children as long as I have and not realize that Betsy doesn't look like a turtle because she wants to; or that Bobby likes himself the way he is because he has thought it all over and has decided that to carry one shoulder higher than the other and to run on the bias is the thing to do; or that Alice is consciously planning her life, at the age of 10, to emulate the letter S. Children don't hold themselves oddly unless there is a reason for doing so. The reason is that there is something wrong that needs righting.

"For example, if Bobby has an earache or a pain in his tummy you don't call on your hero-husband to shame him out of it, do you? If the pain is persistent and does not subside under the usual home first aid, you call the doctor to find out the cause of the pain and what to do for it. That Alice is a letter S and comfortable when in that position is evidence that there is something lacking that should be supplied. No child is naturally sluggish and inactive all the time; and whether or not it is called laziness, for want of a better and realer name, it is lack of physical stamina or vigor. The cause of this condition should be discovered, because it is not natural."

"Whew!" they all exclaimed. "Listen to our maiden aunt!"

"Well," I added. "I may not have children of my own, but it's my job to work with and examine many of them every day, and I just can't help throwing a bomb in your midst."

"That's all very well," said Betsy's mother, "but you can't stop there. Tell us what we should do. To me it seems perfectly silly to take Betsy to the doctor just because her stomach sticks out. Really she's perfectly well, you know!"

"Now don't hate me if I tell you that Betsy's tummy is directly related to the condition for which you give her medicine every night."

"But I never said I gave her medicine every night!" *(Continued on page 86)*

Government's Interest in Violent and Sudden Death

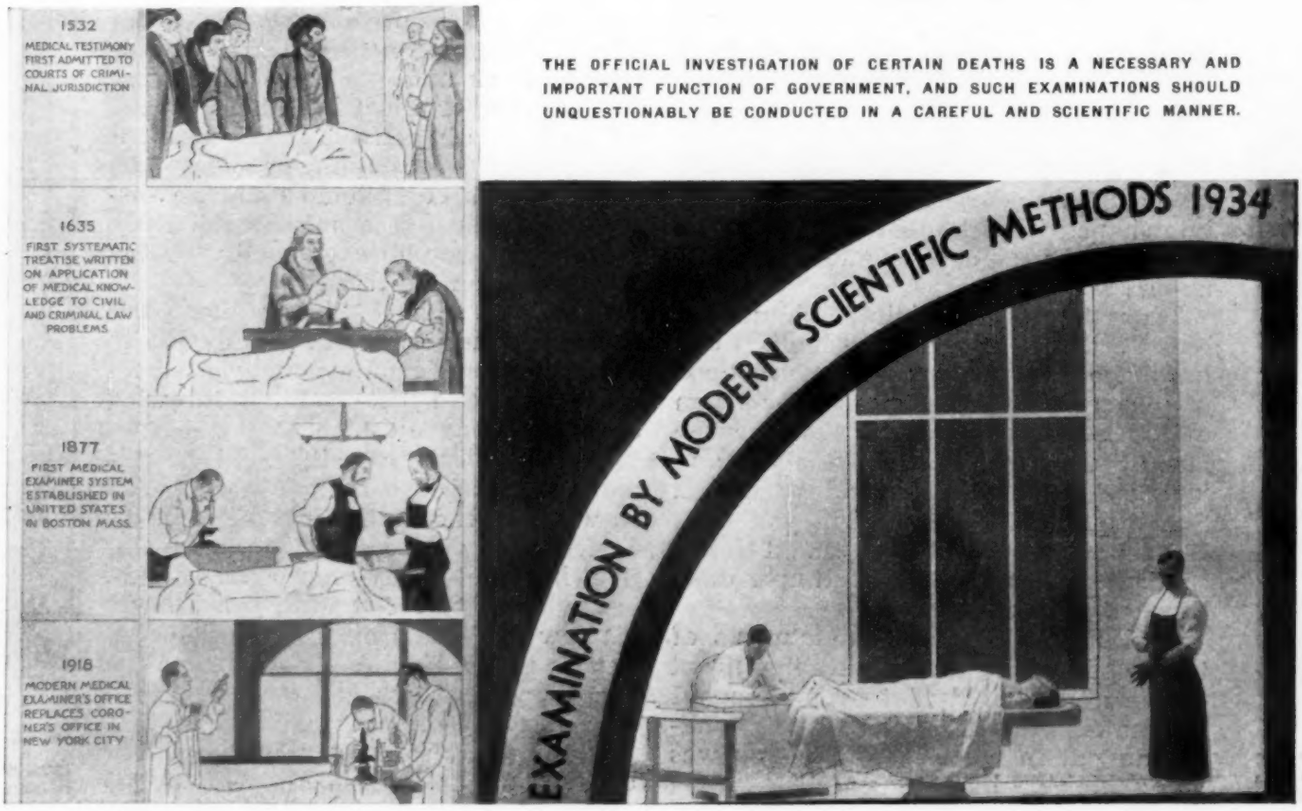
By OSCAR T. SCHULTZ

DEATH is the inevitable end of life and an important concern of the living. Through education and legislative enactments relating to public health and safety, organized society strives to delay and to prevent death from accident and disease. It rigidly prescribes the qualifications of those who may minister to the sick and to those in danger of death. It requires the filing of a proper and official death certificate in order that the dead body may be legally disposed of by burial or cremation. These manifestations of society's concern with death unfold themselves many times daily.

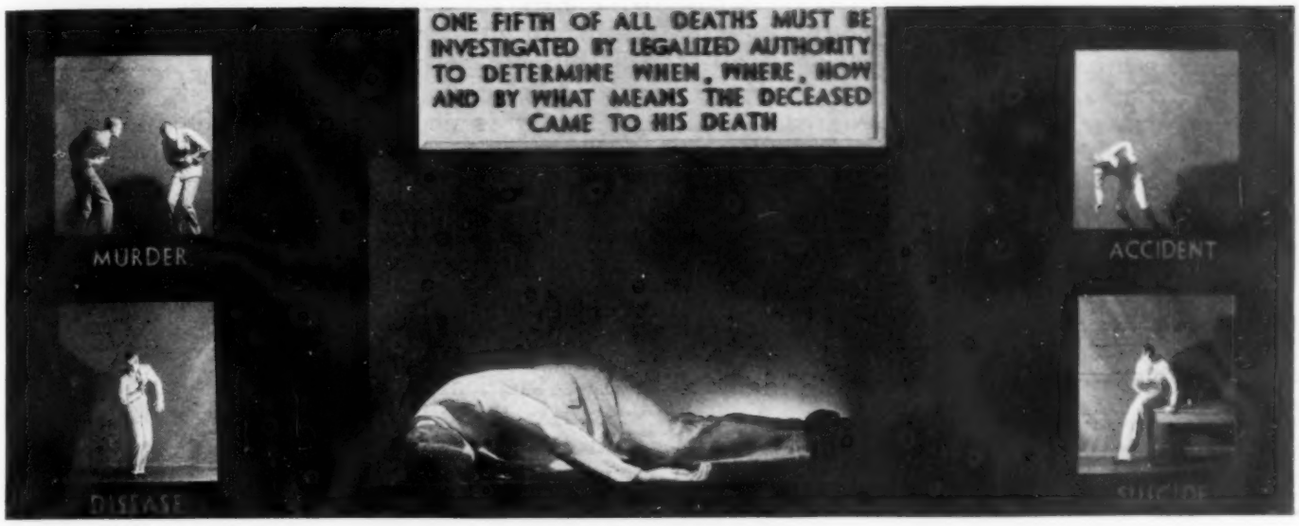
With certain forms of death, organized society, through some agency of its established government, must concern itself more minutely and more directly in each case. It must do this to defend itself against crime and to protect the interests of survivors. The story of such deaths was told by the Century of Progress exhibit of the committee on medicolegal problems of the Institute of Medicine of Chicago. The exhibit, which has been transferred to the Museum of Science and Industry in Jackson Park, Chicago, will form part of a permanent museum of medical science.

The theme of the exhibit, a central diorama figure, is that of a dead person. The absence of any distinguishing characters in the background or surroundings suggests that death might have occurred anywhere—on the street, in the theater, in the office or in the factory. The figure is fully clothed; obviously death did not come while the victim was in bed, surrounded by family, physician and nurse. No evident cause of death is apparent; the end must have come suddenly, probably unexpectedly. Who was this unfortunate person? How, when, where and by what means did he come to his end? These are questions that the government must ask and answer in the case of every such death.

THE task of the government in the investigation of such deaths is not a light one. A study made for the National Research Council in 1932 showed that in five populous communities in the United States, which were selected


1532
MEDICAL TESTIMONY FIRST ADMITTED TO COURTS OF CRIMINAL JURISDICTION
1635
FIRST SYSTEMATIC TREATISE WRITTEN ON APPLICATION OF MEDICAL KNOWLEDGE TO CIVIL AND CRIMINAL LAW PROBLEMS
1877
FIRST MEDICAL EXAMINER SYSTEM ESTABLISHED IN UNITED STATES IN BOSTON MASS.
1918
MODERN MEDICAL EXAMINER'S OFFICE REPLACES CORONER'S OFFICE IN NEW YORK CITY
EXAMINATION BY MODERN SCIENTIFIC METHODS 1934

THE OFFICIAL INVESTIGATION OF CERTAIN DEATHS IS A NECESSARY AND IMPORTANT FUNCTION OF GOVERNMENT, AND SUCH EXAMINATIONS SHOULD UNQUESTIONABLY BE CONDUCTED IN A CAREFUL AND SCIENTIFIC MANNER.


ONE FIFTH OF ALL DEATHS MUST BE INVESTIGATED BY LEGALIZED AUTHORITY TO DETERMINE WHEN, WHERE, HOW AND BY WHAT MEANS THE DECEASED CAME TO HIS DEATH
MURDER
ACCIDENT
DISEASE

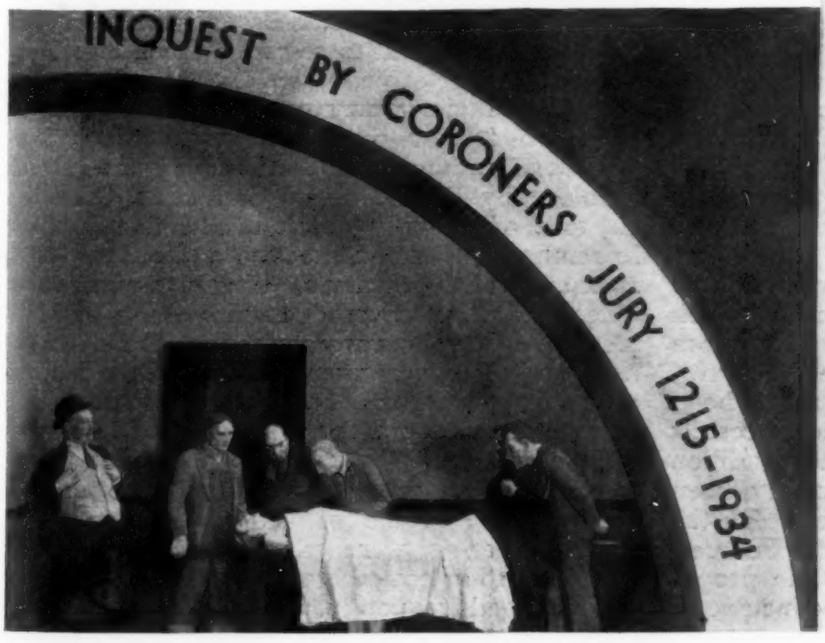
for study, from 1 in 10 to 1 in 6 of all the deaths that occurred were of a character that required official investigation.

When the investigation of such deaths is made, it is found that they fall into four main classes: murder, suicide, accident, and sudden death in those who have not had medical care at the time of death. Investigation of the cause of death is necessary for the detection and punishment of crime and for fixing the responsibility for negligence in accidental deaths. Suicide and sudden death must be investigated to exclude crime and negligence. In the study already referred to, 3.5 per cent of all the deaths requiring official investigation were caused by murder, 8.1 per cent by suicide, 34.4 per cent by accident and 50.3 per cent by disease, the circumstances of death in the last group being such that it required investigation to determine that death was due to a natural cause.

In the exhibit, murder is represented by the most common form of homicide, shooting; suicide by its commonest form, poison; accident by the most common form of violent death, that caused by the automobile; and disease by a figure toppling over with a fatal heart attack, the most frequent cause of sudden death.

THE pistol is the tool of choice of the murderer. It is graphically shown how important information may be gained by careful study of bullet wounds and of the bullets themselves. The proportions of the various kinds of murder are tabulated.

THE MOST PERNICIOUS FEATURE OF THE CORONER SYSTEM IS THE INQUEST BY THE CORONER'S JURY, COMPOSED OF MEN WHO MAY BE WHOLLY UNFAMILIAR WITH THE HIGHLY TECHNICAL FIELDS OF LAW AND MEDICINE.



FIRST DEFINITELY OUTLINED IN THE MAGNA CHARTA OF ENGLAND
1215
1630
FIRST RECORDED CORONER'S INQUEST HELD IN COLONY OF MASSACHUSETTS BAY—BASED UPON ENGLISH SYSTEM
1783
CORONER OF THE NEW UNION CONTINUES TO FUNCTION UNDER OLD COLONIAL & ENGLISH LAWS
1890
CORONER CONTINUES TO FUNCTION UNDER 600 YEAR OLD LAWS WITH SLIGHT MODIFICATIONS

Tables present the relative frequency of various forms of sudden death and the steadily increasing frequency of heart disease as a cause of sudden death. The importance of distinguishing between certain forms of coma and poisoning is emphasized.

Facts relating to suicide, including the rate, the relative proportions of the various forms of suicide, and the organs to be examined for the detection of poisons are presented. As has been noted previously in times of financial stress, the suicide rate increased during the depression.

It will come as a distinct shock to many to learn that the total number of American soldiers killed in battle during the entire period of our participation in the World War was 53,000 whereas the number of persons killed by accident in the United States in a single year, 1931, was 97,000. We are properly horrified by the wastage of human life in war, but we have become callous and indifferent to the much greater destruction of life by the accidents of peace time.

If the organization of society demands that certain deaths must be officially investigated, some agency of government must be set up to make the investigation. Throughout the greater part of the United States this agency is the office of coroner. In a few localities, notably Boston, New York City, and Newark, N. J., the coroner has been replaced by the medical examiner.

The most pernicious feature of the coroner system is the inquest. The usual type of coroner's jury is depicted viewing the dead body preparatory to being sworn in its presence. In the earliest times the coroner was required to be a knight; today he is required to be nothing more than a voter, although his duties lie in the highly technical fields of law and medicine. The coroner's office has undergone little or no change that might better adapt it to modern conditions.

The medical examiner works under more scientific conditions. Sketches in the exhibit illustrate the first acceptance by a court of expert medical testimony, the first treatise devoted to the science of legal medicine, the establishment of the medical examiner system in Massachusetts in 1877 and the organization of the modern medical examiner's office in New York City in 1918.

The official investigation of certain deaths is a necessary and important function of government, and such examinations should be conducted in a careful and scientific manner. This work can be better performed under the appointive medical examiner system; hence it can be of greater value to society than when it is done under the elective coroner system.

Why Condition the Air?

(Continued from page 25)

mer. We speak of oppressive, muggy days, when we do not feel well and do not accomplish much. It is usually the high humidity plus the heat of the outside air that causes our discomfort as well as our inefficiency on those days. Such air should have a part of the humidity removed before it is allowed to enter our buildings.

Air that is circulating too rapidly may also predispose to colds and other respiratory conditions. It has been found that persons in rooms where the air circulates definitely but slowly have a lower incidence of acute respiratory infections than those in rooms where there is more rapid circulation.

Air conditioning has saved the lives of large numbers of infants born prematurely. Such infants actually freeze to death at room temperatures which are comfortable for adults. Soon after the premature baby is born, his body temperature begins to fall, and death results unless some special means is used to condition the air. This conditioning has usually been brought about through incubators in which the temperature may be held at the desired degree, from 75 to 100 F. Not only must the proper temperature be maintained within the incubator, but the proper humidity must be provided and the air must be kept in circulation.

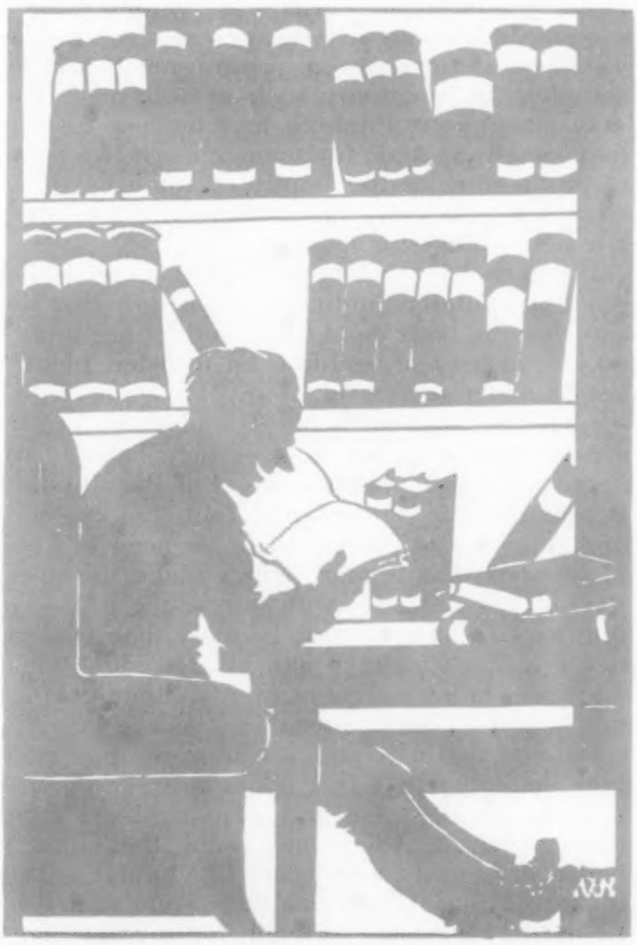
In the Infants' Hospital in Boston it has been found that a relative humidity of 65 per cent, with the air circulating so that it changes twenty-five times in an hour and moves at the rate of 15 feet a minute, is best for the nursery. No attention is paid to so-called fresh air; it is purely a matter of properly conditioned air.

Perhaps there is no better single example of the necessity of conditioning air than that employed in the case of the Dionne quintuplets, reported by Dr. Dafoe of Callander, Ontario. He tells of wrapping each of the five infants in remnants of cotton sheeting and old napkins soon after birth because nothing else was available. He then covered them with a heated blanket. "Blankets were put into the oven to heat, and these were wrapped around the babies and changed repeatedly. Some one was sent over to a neighbor's for a basket and returned with an ordinary butcher's meat basket. The heated blankets were placed in the bottom of the basket, and the babies wrapped in their warm covering were placed in a row and covered with a heated blanket. The top blanket was changed frequently, *(Continued on page 87)*

Overcoming Worry

By MARGARET WYLIE

MANY ARE the effects of worry on the worrier. Chief among these are inactivity, restlessness, nervousness, loss of appetite, loss of sleep and loss of disposition. Furthermore, there is an effect on the person who comes under the influence of the worrier. To the child it causes great unhappiness. A child can detect signs of worrying and trouble. It causes him to feel strain and anxiety; sometimes mothers cause anxiety without even knowing it. On one occasion the mother of a 10 year old boy and a 13 year old girl had a difficult time with the boy. At her wit's end, she told him she was leaving home, and she dressed and left. The boy apparently saw through his mother's threat, but the conscientious girl worried considerably. It was when she was 18 that she revealed to her mother what this situation had meant to her and the anxiety and unhappiness it had caused her for years. Each time her mother went out she worried and felt anxious until she returned. Such an incident results in a feeling of insecurity for the child. To the older members of the family it causes vexation, irritation and also unhappiness.



AN ABSORBING BOOK IS OFTEN EFFECTIVE IN ROUTING WORRY.

No good comes from worrying. The person who worries is not helped by it, and the person who lives within the worrier's sphere is made unhappy and insecure by it.

The situations that cause worry can be grouped into two major classes: those that cause us to feel some kind of threat, as ill health or sickness, and those that cause us to feel some deprivation or loss. Threats and deprivations in general interfere with our accomplishments and block our plans. They are situations that bring out fear. Worry is a form of fear. In some persons this is even a chronic state.

Worry under such circumstances comes from two chief sources: a feeling of inability to deal with new and unusual situations and a feeling of strain from inertia due to intense pain or shock. The situations are indeed difficult enough in themselves. They cause pain or shock. In addition they often arouse a feeling of inability to deal with them because of the newness, the strangeness, and the difference from our past experience. Inability to deal with the new and strange is illustrated in many of the problems that mothers discuss with regard to adolescents. Such problems arise usually from a lack of understanding between the two generations.

THE hope of the whole situation lies in the fact that one does not have to worry. There is no virtue in worrying. It does harmful things to the worrier and those in his zone of influence. Nature has so made man that he has within his make-up the ability to deal with these situations through thought that leads to action and to wholesome feeling. We have seen that the insecurity of the situation, the pain or shock, and the inability for proper action are all factors that account for worry. One psychologist in discussing human development states that even as a tiny baby the child is protected by nature in order that his nervous system and his intellectual processes may have time enough to develop, so that never again throughout the course of his existence will he be helpless to deal with situations and so that with the growth of his nervous system he will have the ability to deal with situations as they come to him. As he grows older, he can take over more and more responsibility and deal with increasingly difficult problems. By the time he has reached maturity, he should have learned well, through the objective facing of facts and frequent prac-

tice, effective methods of overcoming obstacles and dealing with difficulties.

Consideration of specific problems differing in degrees of seriousness may aid us in finding a solution, a way of overcoming worry. Let us consider first a situation in which delay causes worry. A daughter of the household has gone to a party after telling her mother that she will be home at midnight. Twelve o'clock comes, and mother listens and waits. Perhaps worry has set in even earlier than this. At 12:15, daughter is still not at home; 12:30 comes, and no daughter; 1 o'clock, and still no daughter. At 1:15, daughter comes in and goes about her preparation for bed. From midnight on, worry has increased almost to a state of panic. Mother has imagined accidents, has planned on calling the hospital, and is weak and ill when daughter finally arrives. How can the mother in the delay situation be helped? How can thoughts help to wholesome outlets? In the first place, the mother needs to know her young daughter, to understand her and to believe in her. She needs to know her daughter's friends, something about the community and something about herself. She will need to appreciate the psychology of filled and unfilled time.

SOME PERSONS FIND THEIR CURE FOR WORRY IN WALKING.

TIME that is filled flies by. Unfilled time drags. Usually in delay, time is unfilled, and to the person who is having the experience it is unpleasant. Unfilled time passes slowly and gives opportunity for this unwholesome reaction in the way of imagination. If you are a worrier, you will need to know what you can do in the way of dealing with the situation and what methods are effective in overcoming the difficulty. Before you can have knowledge, there must be the desire to overcome the difficulty. Of course, if you think there is virtue in worrying and that doing it puts you on the list of recognized and deserving mothers and fathers, you will not want to give it up. But if you have come to a full realization that there is harm in it, you will want to give it up and find active means of dispensing with it.

Part of dealing with the time situation lies in discovering how you can best fill your time. Let us consider how the mother who worried about her daughter might have filled her time to advantage. The most effective thing for her would have been sleep. Perhaps that represents a step beyond the mother's present ability. She has not reached the point where she can relax. She can learn to relax under the circumstances, but first she may have to put in some activity. Such an activity should be so interesting and occupying and of such value that it makes her temporarily forget her irritation; that is, it gives her a chance to let her imagination work on other lines. Men often say that a book of adventure or a detective story is effective; that depends on the book and the reader's reaction to the type of book. Perhaps the mother needed some kind of hand activity such as scrubbing or washing. Sometimes a person needs almost complete body activity such as walking. You may direct your thinking to some one else or find something to do for some one else, for some other member of the family or for a neighbor who is ill. Actively doing something for some one may relieve the tension.

It is a real feat when a mother can get to the point of so understanding young people that she can share in their good times and let her imagination, instead of building up disaster, picture her daughter successful, happy, alive and enjoying a good time with her friends. Naturally, considerable practice is necessary before any degree of skill or happiness out of the situation is possible. A fundamental fact that mothers and fathers and indeed all of us need to keep in mind is that human beings make mistakes. Part of our difficulty with our young people is that we do expect them to be more than human, never make a mistake and always come home on time. In the course of events, human beings are bound to make mistakes. As we grow in emotional maturity and wisdom, we appreciate that the important fact about mistakes is our attitude toward them and what we learn from them. Alfred Adler once said that human beings in America were much like human beings in Europe, but in America there were remorses. Remorse expressed through continually being troubled about mistakes of the past, through

dwelling on them and worrying about them, is unwholesome. Worrying about the future and its possibilities is also bad. In overcoming worry let us put our emphasis on the present moment. Let the past go. If we are human, mistakes are bound to happen. Let us learn from them. The future will care for itself on the basis of what we are doing now.

A SECOND situation of an even greater degree of concern than delay is failure to get to sleep. Persons often worry because they know they ought to have more rest and more sleep. There may be many reasons why they are not getting sleep. They have now come to feel that one of their great difficulties is that they need more sleep; and they assign that as the reason why they are irritable, why things get on their nerves and why they are restless. The first thing to do after the wish to overcome the difficulty is to gain knowledge of certain factors in sleep. A visit to the doctor will rule out illness. Knowing how to relax and lie still is fundamental in getting to sleep. Here again thoughts are important. Some worriers try to get to sleep with their thoughts running a mile a minute, thoughts that are driving and pushing them instead of the kind that help to bring about relaxation. To relax tension, to shift attention from the thoughts that interfere with sleep there must come release through a definite activity. One psychologist said, "Just think very hard of keeping awake." He was sure that this would help to bring sleep. By that process the attention of the person would be so directed to other activities that sleep would come without the worry.

In many cases the method of dealing with the problem of adequate sleep is planning the daily program to get a sufficient number of hours for sleep and to have a quiet relaxing time leading up to rest. To help release tension, amusing stories have a relaxing effect. The story is told of how Coolidge used this method, in his capacity of presiding officer, to deal with a tense anger episode between two senators of Massachusetts. Each senator was scheduled for a speech within set time limits. Each, of course, thought his speech the most important and most needed for the cause. One had gone over his time. The other angrily whispered to him that he was exceeding his time. He retorted in a loud, plainly audible whisper, consigning his opponent to the warmer regions. Exasperated and enraged, this senator appealed to Coolidge asking him whether he had heard what the senator had said. Coolidge without change of expression replied, "Yes, and I've looked up the law in the matter, and you don't have to go." It proved an excellent release for the infuriated senator. Humor is a way of releasing tension.

Music and art activities have their effect, for under their influence we will learn how to be quiet without any thought of sleep. We need to have practice in the art before we can get to the period of success and, as in all human problems, mistakes may be expected. The especially fine thing that the neurologists have pointed out, however, is that mistakes are not bad for nervous systems but that tension and strain are. This is the reason why the old slogan, "Don't worry," proved so ineffective. Say "don't" to a child, and he does what he is told not to do. Say "don't worry" to a grown-up, and he continues worrying with increasing assurance that he has cause. The health of the nervous system is maintained through action; hence, we feel the need of activity as our way out of difficulty.

A THIRD situation of intense worry is illustrated by sickness. Perhaps some member of the family is dangerously ill. The family is faced with this terrific new situation. It is essential to realize that activity is the only wholesome means of dealing with the situation; and such activity may take the form of doing something for the child, doing something for the doctor, doing something for the nurse in the situation or doing something active to keep other members of the family from feeling the strain and upset. In the face of difficulty, make it a rule wherever possible to do something active such as working, playing, walking, singing, whistling, worshiping or doing something for some one else. As human beings, we have many difficult moments to face that cause concern, alarm, anxiety and sometimes worry. The solution for us is that of using the energy, our emotional activities and thought activities toward directing that energy into useful activity instead of useless and harmful strain.

In dealing with any troublesome situation, then, it is necessary first to have a desire to do something really vital about it and then to work for ways and methods. Be active about the removal of its causes. If a health condition is the basis of trouble, get aid from the doctor or clinic or hospital and follow through the treatment suggested. Study the difficulties and dangers in the situation. Discuss them, and seek aid from those who have dealt successfully with similar situations. Find ways that help you deal with worry problems. It depends on the values of things that are worth while for you, the things that will be most helpful to you. Hitting a punching bag or scrubbing the bathroom rug, talking it over with some other person or walking in solitude in the woods, listening to music or praying may be the most helpful way of dealing with your particular trouble. With experience, honest practice and help there will come mastery and banishment of worry. In place of worry will come courage, an active attitude in difficulty and creative outlets in new ways of work. Living is for the most part learning. Joy comes from learning to triumph over obstacles that confront and perplex us.

ROBERT POLLAK Discusses PSYCHIC AILMENTS

The First of Two Articles on

Occupational Diseases of Musicians

AS THE REHEARSAL PROCEEDED, THE PAINFUL GRIMACES AND THE LOW MOANS CONTINUED.

A FAMOUS conductor once engaged a new concertmaster for his orchestra. At the new violinist's first rehearsal the conductor noticed that the man looked ill and uncomfortable. When he asked the violinist what was the matter, the answer was: Nothing. As the rehearsal proceeded, the painful grimaces and low moans continued. At last the conductor could stand it no longer and, laying down his baton, he said, "My good fellow, you must tell me. What is the matter?"

"Nothing, maestro," answered the musician, "only, I just don't like music."

This, fortunately, is the only case of its kind on record, and yet musicians all over the world are plagued by specific occupational diseases pertinent to their own profession. Even students of music and the majority of their pedagogues are only dimly aware of the extensive ravages of these occupational neuroses. A scholarly study of their pathology and treatment has been made by Dr. Kurt Singer of Berlin, an erstwhile musical critic and a veteran neurologist. It is from his book, "Diseases of the Musical Profession," that much of the material in this article has been drawn.

Disease and profession obviously do not belong together. The practice and performance of a healthy musician should serve him as an invigorating tonic. Take the fiddle away from the fiddler and you may rob him of a stimulus and incentive without which he cannot exist. Nevertheless, in hundreds of cases the musician fails to reconcile his routine and his constitution. At this failure, disease stalks into the picture and links arms with the makers of music.

The economic plight of all professions during the depression has influenced the American community of musicians both mentally and physically. The opulent concert business of the gaudy twenties exists no more. Many a first-rate second rank teacher or recitalist who used

to be in the $5,000 a year bracket is now hard put to it to eat. The conservatories are full of young people who are eager for instruction but who have no money to pay for lessons. Expert teacher and talented pupil are often too shy to force their way into the confused contemporary world of concert and radio by means of publicity. If only for this reason the musical world is a rich field for the psychic and physical ailments that batten on musicians.

It is important to note that most musicians with fine talent start their careers with a significant handicap. In the more conventional paths of life the way to occupation and profit is a straighter road. The constitution of the boy invariably dictates his professional direction. If he is an incurable stammerer, his parents will hardly send him to a divinity school. Nor do parents raise a thin, hollow-chested boy to be a steamfitter. The case of the wonder child, the musical prodigy, is different. Any child with the slightest gift for ivory keys or catgut is a prodigy to his parents; and once his early talent is revealed, his physical aptitudes are often disregarded.

IN AN old story that is supposed to be funny but in which the overtones are sad, a mother takes her budding 8 year old virtuoso into the gallery to hear Heifetz. The boy listens with awe. During an intermission a friendly lady leans over and tells the mother that Heifetz gets $3,000 for a concert, whereupon the mother turns on her son, slaps him across the mouth and says, "Now will you practice?"

Like many other prodigies, this 8 year old is already working four or five hours a day in a stuffy room. His parents, confusedly influenced by greed, vanity and love, pay little attention to his diet, exercise and relaxation. If he persists, his work from the ages of 13 to 20 will become more grueling than ever. If he means to develop a vital and instinctive technic, his labor is of necessity arduous.

At best, youth is a hazardous period. The danger zone of puberty is one of physical, mental and social crisis. The youth with talent must be guarded in some way from his own excesses, from the blindness of his parents and sometimes from the stupidity of his teachers. The modern teacher must be something of a pathologist as well as a musician. He should be able to detect the tendencies toward occupational disease in this formative period. He is responsible for the teaching of the hygiene of work and rest as well as for instruction in harmony and counterpoint.

The business of becoming a fine musician is not easy. The medical student and the law student enjoy a long period of training in which their mistakes, even their deficiencies in knowledge, are not of the greatest importance. As collegians, they may be like tournament tennis players who drive a ball into the net once in a while simply to relieve the tension of competition. But if a person is to get anywhere in a musical career, these days, he must practice his profession while he learns it. One bad habit of practice may put him out of the running. He is constantly on guard against stagnation and reaction with a greater sensitiveness than is essential for the successful doctor, lawyer or engineer.

The development of technic is a matter of proper direction and self conquest. As most persons are right-handed, the natural weakness of the left hand should be overcome by constant work. The action involved in singing or playing requires so much additional energy that Dr. Singer and his colleagues have taken the trouble to measure it. Every hour of piano playing either in practice or in performance consumes 180 calories. During the rendition of the average concert piece a violinist uses 400 cubic centimeters more of oxygen in a minute than he normally needs. Singing produces a 50 per cent increase in chest activity.

Through careful experiment, Dr. Singer has come to the conclusion that the musician should practice in periods of two hours each, either two or three times a day depending on the individual desire and capacity for work. During each period it is advisable to rest for two minutes after forty minutes of practice, and again for four minutes after eighty minutes of practice.

THE commonest of the professional diseases of musicians is nervousness. It is a harmless, vague concept, difficult to define in the light of modern mental science; yet the neglected nervous musician may be on the highway to failure. Fortunately the neurasthenic person is not shy about his troubles. A wise doctor can easily set his engine back on the track.

The nervous symptoms of the musician are familiar enough. He notices that he does not feel physically up to his work. He fails to persevere, and he has no mental alertness. At night he tosses about feverishly and is unable to go to sleep. He becomes, for the nonce, a moaning hypochondriac. While he is in pleasant or unfamiliar company, he may lose his troubles at intervals; but once he is back at his routine they begin to gnaw at him again. If he is to remain placated, he dare not allow himself a moment of introspection.

The smart teacher soon senses what is going on in such a pupil. He knows that if his pupil has exceptional talent, he has come to his job attentive, highly impressionable and extremely sensitive as to his nervous system. The fact must be faced that if a student has natural musical endowments, he may already be a rallying place for hysteric or neurasthenic demons. In one sense, all musicians are nervous. They perforce assemble a great bulk of erudition in their minds. Millions of tones

SHE SLAPPED HIM ACROSS THE MOUTH AND CRIED, "NOW WILL YOU PRACTICE?"

sound in their cerebral universe. They are constantly driving themselves to more work, faster blood circulation and greater activity. Small wonder, then, that the musician is tormented with frequent humming in the ears, pressure on the cranium and cramps in the back of the head.

The neurasthenic person often falls victim to himself on the platform with disastrous results. Dr. Singer states:

> The nervous person usually suffers in his professional activity much more than he may show. Yet there are many soloists whose nervousness in playing is quickly noticed to the disadvantage of the artistic effect. They quickly transmit their feelings into movement and are therefore often too early in "chiming in"; their inner haste dislikes the adagio and they precipitate a slowish composition in restless and uneven time. Excitement leads to trembling movements in the bowing arm, to false vibrato in the left hand fingers, and, in the woman singer's voice, to tremolo and to poor, agitated and superficial breathing. Vasomotor disorders . . . seldom fail to appear; the heart throbs quickly and forces the breath to still faster puffs, the face turns red, the pianist's fingers become moist. Circular vasomotor disorders in the head cause glimmering before the eyes, sensation of fear and dizziness and failure of the memory.

THESE platform disorders are familiar to every observant concert goer. They sometimes strike at the best instrumentalists in the profession. For years, Paderewski could not rid himself of the habit of grunting and stamping on the pedal in broad, forte passages. Gieseking owns a nervous snort that can be plainly heard twenty rows back. Cortot has always been troubled with loss of memory, and I have seen him break down twice in the middle of solo compositions. Mundane nervousness makes many conductors read everything too fast. It is a rare maestro these days who can approach a slow movement with the requisite restraint and placidity.

Singer concludes that nervousness among musicians is essentially a disease of exhaustion and as such is mostly acute and temporary. He warns the student with nerves not to shut off his practice entirely but drastically to reduce the length of his working time. Between periods of practice he should walk, bathe, sleep, read and take himself away from music if he can. For the normal student he advocates the following sensible regimen:

> One hour of general technique (etudes, scales, bowing), an hour and a half of applied technique (technique of the repertoire, parts of compositions), and an hour and a half of purely artistic playing devoted to style and finished performance. Between every two hours a minimum of fifteen minutes rest should be taken.

IT IS only fair to note that the nervous gestures of a virtuoso do not necessarily mean that he is either hysterical or neurasthenic. The ardent movements of a great conductor may be the natural translation into action of eloquence and power. This is evident to most of us who, although we do not always admit it, like to see great musicians as well as to listen to them.

The mental and physical tolerance of musicians can be broken down by shocks so severe that no temporary measures effect a cure. When this occurs, we are confronted with the psychopathic or abnormal musician. The musician, genius or even hack, is addicted to nervousness. If, in addition, he has an explosive, highly charged temperament, if he is given to consistent morbid introspection and is unable to adjust himself to his immediate society, he is on the road to a complete breakdown. In the case of the abnormal person all the nervous tendencies become fixed states, and the cure, if cure is a desideratum, becomes correspondingly more complex.

Advisedly I write "if cure is a desideratum." The psychopathic person is not necessarily inferior mentally. Goethe, Strindberg and Beethoven, in company with many of the most distinguished murderers and degenerates, have all been described as psychopathic. Berlioz, the great orchestral master, was patently an abnormal person, as any reader of his fascinating autobiography will testify. Both Beethoven and

Berlioz were able to calm their disruption and frenzy to some extent in composition. If some expert pre-Freudian had returned them to a dogmatic "normalcy," our loss would have been incalculable.

The genius, however, need not necessarily be of the psychopathic or even of the nervous type. The external lives of such placid burghers as Bach and Handel prove that the genius may exist comfortably as a citizen in a calm, even humdrum, environment. Mozart was a personable, lusty fellow, not given to any quirks that would intrigue a mental physician of the present day. Gruhle has made a series of astonishing pen portraits of notorious psychopathic persons from all ranks and professions. Many of their notable characteristics, such as the criminal, the erethistic, the lethargic and the dipsomaniacal, are almost undiscoverable among musicians.

DR. SINGER classifies psychopathic musicians into three hazily defined groups. First he lists "the very excitable psychopaths, easily offended and sensitive, who react coarsely, indeed aggressively and violently to a harmless word." I once knew a contralto who had a fine voice and who was employed as a principal at various times by the two major opera companies of this country. She was a person of fine intelligence, but she was hypersensitive to such a degree that she could get along neither with her friends nor with her colleagues. Although she was plain in appearance, she was insanely convinced that every conductor, baritone and stage director was eager to seduce her. Nothing was ever further from their thoughts. As time went on, she became more and more isolated from a society that was not capable, to her mind, of understanding. Her social reactions were morbidly violent. She lost job after job, unsuccessfully tried suicide, then a nunnery, and finally landed in an insane asylum.

> We find more frequently . . . fantastics, those persons gifted with fantasy, whose yearning for originality and self-satisfaction presents itself less in great, new-formed work . . . than in a strongly stressed peculiarity of behaviour and appearance. These are the vain, constantly self-occupied eccentrics, clownishly original . . . full of caprices, whims and affectations.

The foregoing description forms Dr. Singer's second classification, and it is an excellent paragraph portrayal of Vladimir de Pachmann, the prototype of all such psychopathic musicians. His antics on and off the concert platform led Huneker to dub him "The Chopinzee." One will find similar specimens, minus de Pachmann's marvelous gifts, in any large conservatory.

> Among women and girls . . . those that are shy and tender are more usual than choleric or fantastic types. They surrender themselves without restraint to a passion, to an enthusiasm and to an ideal; they echo mechanically and they worship; their love-life is of a violent energy and intensity, especially during the puberty crisis. Only a few attain individuality, aim and results in this pseudo-activity, which is in reality an erotic self-abandonment.

This class of psychopathic musician explains to Dr. Singer why no woman has ever been a great creative musical genius. The biologic urge to motherhood is essentially stronger than the artist complex. In the long run it always submerges the potential creativeness of the woman composer. The same thesis can be successfully defended in the case of sculpture, painting and even literature. It is curious that there should be such a wide difference in quality between the female artist-creator and the female artist-interpreter.

The mental condition of the psychopathic musician almost always hides, under the symptoms of physical sickness, the usual parallels of psychic infirmities. Dr. Singer enumerates a few external symptoms:

> Other characteristics of the musician are the nervous glottis cramp, the sensation of a lump in the throat, one-sided deafness, the respiratory cramp, hiccoughs and belching, hoarseness, coughing, stammering, the diaphragm cramp, trembling and weakness of the hands, states of tension in the fingers and the tongue, paralysis of the swallowing musculature and of the soft palate, vomiting and various disorders of vasomotor activity.

Not ordinary nervous fear but the perpetual expectation of fear may easily develop into abnormality. The slight platform nervousness of the performer is not harmful; indeed it may act as a tonic to performance. But "more serious is the fear of fear, in the sense of an exaggerated, steady indisposition, settling into the rut of a compulsion-complex."

THIS type of musician, once past puberty and ready to stake everything on a professional career, is cursed with constant irresolution and a sense of personal and artistic inferiority. As the hour approaches for stage performance, he suffers the tortures of the damned. The conviction that he will fail has developed into a compulsion complex. He strives to convince himself of his own merits but to no avail. In vain, he tries to prove how nonsensical is his terror. If he manages to play or sing at all, it is as though he were stretched on the rack.

Ganna Walska proves a case in point. As a singer she has been mocked by every intelligent critic. Her beauty on the stage led one nasty Philadelphian to write that, like a well behaved child, she should be seen and not heard. Yet a foreign correspondent who knows her well told me that she has a fine voice and is an intelligent musician. He has heard her sing in her own home when she thought she was alone. Before a concert she is terrorized and, once out on the platform, she is lost.

[NOTE.—This is the first of a series of two articles. The second, dealing with more specific physical ailments of musicians, will appear in the February issue.]

SOME OBESITY "CURES" AND

By ARTHUR J. CRAMP

IN THE Gay Nineties most women were satisfied with, and rightly not a little proud of, the curves with which nature had endowed them. The burlesque shows of that day displayed as their galaxies of beauties what has since been somewhat ribaldly described as the "Beef Trust Chorus." Times change, and for the past fifteen or twenty years the modern woman has sought the lissome figure and boyish form.

In those earlier days, women who had been cheated by nature of the much desired curves, found in the advertising pages of many magazines and newspapers the claims of advertisers who guaranteed short-cut methods of developing busts, hips or whatever other parts of the anatomy lacked the desired contours. None of the bust or hip developers would develop bust or hip, but at least most of them harmed nothing but the purse and one's confidence in human nature.

Today most of the appeal is in the other direction. Everywhere one finds advertisements of cures and treatments that are warranted to turn stylish stouts into sylphs. If these antifat preparations, drugs or combination treatments were, like most of the bust developers, simply humbugs that did not affect the public health, the medical profession might ignore them. Unfortunately, most of the alleged short cuts from obesity to lissomeness are actually or potentially harmful to health, and some of them are even threats to life itself.

While it may sound brutal, it is nevertheless a fact to say that nearly every person who is overweight reaches that condition because of overeating and underexercising. There are, it is true, some overfat persons who owe their unfortunate condition to certain glandular dysfunctions; but their number, compared to the total number of obese men and women, is negligible. Certainly the great percentage of men and women who are overweight are so because of errors in diet and too little muscular exercise. To these the exploiters of alleged reducing cures appeal. With few exceptions, obesity cures are advertised under the specific claims that they are short cuts to weight reduction and that those who use them do not need to modify their eating habits nor do they need to take more exercise.

Loses 102 Lbs. of Fat—
Is Mighty Popular Now!
How One Woman Lost
20 Pounds of Fat
Long Island Matron Reduces
from 190 to 126 Pounds
St. Louis Woman Loses
20 Pounds of Fat in 4 Weeks
As Young as the Youngest

Kruschen Salts was for years advertised in the British Isles as a wonderful producer of vim, vigor and vitality for men. When it came to the United States, it became an obesity cure, and the appeal was particularly to women.

It is not surprising that people should believe the fantastic claims that are made for so many "obesity cures" when one remembers that there still persists the age-old idea that for every ailment to which human flesh is heir, there must be something in a bottle that will cure it if only one can find the right bottle. Then, to the person without medical training, the treatment of obesity may seem as simple and elemental as the weighing of a sack of flour; the obesity cure advertiser aims to sustain this thesis. The great lure of the public for the enthusiast and the faddist, as well as for the notorious quack, is the seeming simplicity and pleasing plausibility of his claims. Really the treatment of overweight may be and frequently is a most complex matter; not that the fundamentals of overeating and underexercising are in themselves complex, but that the application of individual treatment may well be so. How much less should the overfat eat, and how should the dietary be arranged that the nutritional balance is not too greatly disturbed? How much more exercise should the overweight take and still not throw a dangerous strain on the heart or other vital organs? A high medical authority, in discussing the treatment of obesity, has said, "There are few diseases that the physician is called on to treat in which it is so vitally important to adapt the treatment to special cases, as in obesity, and it must be varied from day to day to respond to indications as they arise."

For the purposes of briefness and clarity, the unscientific cures and treatments for obesity might be classified as (1) mechanical devices, (2) chemical substances and (3) food products. Of these three, by far the largest one of the group is the second, which, in itself, must be divided into those products that are for external use and those that are for internal use.

The mechanical devices advertised for the alleged reduction of weight are doubtless as harmless as they are worthless. They fall

"TREATMENTS"

into three general groups: rubber garments, mechanical vibrators and massage rollers. The garments, girdles or belts are sold under the claim that when these are worn, the movement of the body will massage away the fat; such a claim is quite fantastic. Actually, the only result that is obtained from the use of these rubber garments is that of either supporting pendulous portions of the anatomy or, by pressure, redistributing the more obese portions of the body somewhat more artistically without any actual reduction in the total amount of adipose tissue. That these so-called elastic reducing belts may give a feeling of support to those whose muscular tone is poor is unquestionably true; that they have anything whatever to do with the reduction of weight is just as certainly untrue.

The mechanical vibrators and massage rollers are quite incapable of producing the effects advertised. As has been pointed out by the Council on Physical Therapy of the American Medical Association, such devices are likely to do exactly what a scientific masseur tries to avoid doing; they pinch the superficial tissues instead of picking up and kneading both the deep and the superficial tissues. The same Council has condemned the mechanical vibrators because they do not produce any active exercise.

Of the products comprising the second large group, chemical substances for external and internal use, their name is legion. Those sold for external use, while varying somewhat in physical characteristics, are, without exception, totally worthless. Some of the preparations have been sold in the form of paste to rub on the surface of the body, others as soaps to be used in the place of ordinary toilet variety, still others as powders to be put in the bath water. All are utterly and wholly valueless as a means of reducing adipose tissue. There is no substance known that, whether rubbed on the surface of the body or put into the bath water, will bring about a reduction of fat. While it is true that repeated hot baths, by stimulating metabolism, may bring about some reduction of weight, it is the hot water and not any substance that may be put into the water that speeds up the body processes. Moreover, such a method of reducing weight may not be free from danger.

It is also true, of course, that repeated hot baths, by stimulating perspiration, will reduce temporarily the fluid weight of the body; but the fluid balance is immediately made good with the liquid intake in the form of water, tea or coffee. One can dismiss, then, from any serious consideration all the pastes, soaps or bath powders that are sold for external use in the alleged treatment of obesity. They are all humbugs.

This product, when analyzed, was reported to consist essentially of soya bean flour flavored with cocoa and salt. Obese persons were instructed to take a teaspoonful of this mixture in the place of breakfast and another teaspoonful in the place of luncheon.

METABOLIC STIMULANTS

The chemical substances for internal use that are sold as alleged obesity cures comprise by far the greatest number of preparations in this field. They come in the form of pills, salts, liquids and even medicated chewing gums. In principle, however, they all work in one of two ways: They contain drugs that stimulate metabolism, the body processes, or they contain cathartics. The metabolic-stimulant types of "obesity cures" are definitely dangerous to health and even to life. They have for their essential ingredient either thyroid substance or dinitrophenol. The thyroid type of obesity cure is responsible for occasional deaths, for many cases of thyroid intoxication that result in the patient's being hurried to the operating table, and for innumerable cases of nervous disorders due to the overstimulation of the thyroid gland by the taking of these preparations.

Dinitrophenol is a comparative newcomer, not only to the field of the obesity cure but to medicine. While the product has long been known in industry as one of the intermediate compounds used in the manufacture of explosives, it is only within the past two or three years that the stuff has been suggested as a medicament. Already some deaths have been reported from the use of this powerful substance. Dinitrophenol and its allied compounds not only stimulate metabolism but have the peculiar property of producing an artificial fever. Newspapers, in reporting deaths from the use of this product as an obesity cure, have not inaptly described the action as a "literal cooking to death" of the victim. While subsequent experience may show that there is a place for dinitrophenol or its allied compounds when

FAT people wanted
To Reduce by Quick, New JAD Method for 2¢ a Day
Now if you are fat you can eat your fill and yet grow thin—by the new JAD Method of reducing. Indeed, you can lose as much as seven full pounds the first week and look pounds lighter from the very first day.
Just take a little new Condensed JAD Salts in a glass of water before breakfast and make two small changes in your diet as explained in the folder that comes with the Condensed JAD Salts package. Now try this quick, easy way of taking off fat. YOU'LL SAY IT'S WONDERFUL. 30-day supply costs only 60¢ at all druggists. Remember—Condensed JAD Salts is urged as a poison-banishing agent—to eliminate body moisture and unhealthy bloating—not as a reducing one.

Jad Salts was for many years advertised as a cure for kidney disease. Three times the product was declared misbranded under the National Food and Drugs Act because of the false and fraudulent claims made for it. Today "Condensed Jad Salts" is an alleged obesity cure.

Government chemists reported that Sleepy Salts was essentially a mixture of Glauber's salt and Epsom salt, with a very small amount of table salt.

How to Lose Fat Quickly
Without Drugs
Without Starving
No Violent Exercise
Eat Big Meals, Yet See Inches Melt Away
Fat Goes Fast Or No Cost
FEELS LIKE A "NEW WOMAN"
Lose Ugly Fat---
But Build Health!

in the hands of physicians who are familiar with its terrific potency, it is quite obvious that it has no place whatever in nostrums sold for the self treatment of overweight.

PURGATIVES

The other group of chemical substances used internally for the alleged reduction of weight comprises the purgatives or laxatives. There has been a veritable flood of variously named "salts" sold as cures for obesity, but there have also been "teas," pills and other purgative preparations for the same purpose. All such drugs act by so stimulating the intestinal tract that the food is hurried through before a large part of it can be properly assimilated. In the case of the salts, or salines as physicians call them, some weight is also temporarily removed by the action of such substances in drawing water from the tissues into the bowels.

The absurdity, not to say the danger, of using purgative drugs as weight reducers should be obvious even to those without medical training. What sense is there in eating a pound of food following the taking of a purgative drug that results in half of the same food passing through the entire digestive tract unassimilated and practically unchanged? If the only element involved were a mere waste of food, the thing might be dismissed from a medical point of view, as the problem would resolve itself into one of economics. But it is to be remembered that most purgatives act by irritating the lining of the intestines, so that, in addition to wasting good food, obese persons who persistently take purgatives for the alleged purpose of reducing their weight are also in grave danger of seriously injuring their digestive functions.

REDUCING BREADS

The third and last general group of "obesity cures" has been classed, for want of a better description, as "food products." These comprise the so-called reducing breads and a more recent addition to the obesity-cure field of what might be termed food powders. The reducing breads had considerable vogue a year or two ago. They contained slightly more protein and slightly less carbohydrate than ordinary white bread. Compared with ordinary baker's bread, they were unpalatable.

One of the most widely advertised of these products was called Basy Bread, which, analysis showed, differed in composition and caloric value but little from graham bread except that it was more acid. Its caloric value was more than equal to that of the average graham bread and almost equal to that of ordinary white bread. It was claimed to have been made of whole wheat flour, soya bean flour, carrots, fruits and yeast. But it was the instruction that went with Basy Bread that constituted the "joker." The purchaser was told to cut down her bread intake to a single slice of Basy Bread three times a day! In addition, she was also urged to substitute a "dash of milk instead of cream" and to "walk briskly several miles a day." Obviously, the same results could have been accomplished much more pleasantly by eating only three slices of ordinary white bread a day and following the same routine. It would seem that the only useful purpose that Basy Bread might serve would be to help those persons who are so constituted that they cannot follow a diet without a certain amount of hocus-pocus and the expenditure of money. For all other purposes, the stuff was quite worthless.

Another reducing bread that had a vogue a few years ago was called Wallace Bread. The advertising slogan was "Eat Six Slices Daily and Reduce." It was described as a scientific way of combating overweight. When analyzed, it was found to have a total carbohydrate content almost equal to that of ordinary bread, and it furnished 1,143 calories to the pound as compared with the 1,150 or 1,200 calories furnished by ordinary white bread. If six slices of Wallace Bread and the dietary restrictions that went with it resulted in a reduction of weight, then six slices of ordinary baker's bread with these restrictions would certainly have done the same.

One more widely advertised reducing bread was known as Jack Sprat Bread and was described as "The Enemy of Fat." Analysis disclosed that Jack Sprat Bread had a carbohydrate content ranging between 36 and 40 per cent. Ordinary bread contains about 50 per cent of carbohydrate. Its protein content averaged about 18 per cent as compared with about 10 per cent in ordinary bread. In food value it was found to have 1,139 calories to a pound, or 1 calory less than whole wheat bread and only a few calories less than ordinary white bread. Those who bought Jack Sprat Bread were, of course, told to substitute it for ordinary bread and also to avoid cake, pastry, potatoes, cereals, milk, candies and various other foods. The same amount of reduction could have been brought about by continuing to eat ordinary white bread in no larger quantities than that of Jack Sprat and following the dietary restrictions suggested.

FOOD POWDERS

The "obesity cures" of the food powders type are, as already mentioned, comparative newcomers. One of the first was known as Stoll's Diet-Aid. This product came in the form of a powder that was to be mixed with water and taken as a beverage. It was composed of milk chocolate, starch and a water extract of roasted whole wheat and bran. It consisted of more than 75 per cent of carbohydrates, nearly 4 per cent of fat and more than 9 per cent of protein. In itself, obviously, there was nothing about Stoll's Diet-Aid that would reduce, but here, too, the "joker" came in the instructions that went with the package. The purchaser was told to eat no breakfast but to take in its stead one or more cupfuls of Diet-Aid; to eat no lunch but to take another cupful or more of Diet-Aid. The breakfast consumed by the average sedentary woman should be about 500 calories, while her lunch should be about 700 calories. If the user of Stoll's Diet-Aid took three cupfuls of that preparation in the place of breakfast, instead of getting 500 calories she would get less than 33 calories, of which 27 calories would be carbohydrates! The same proportions would, of course, be true for luncheon. It is obvious that any person who uses this method of reducing weight is on a hopelessly unbalanced diet.

Another widely advertised product of the same general type as Stoll's Diet-Aid has been called Stardom's Hollywood Diet. This also was a powder that was to be made into a drink. Analysis showed that it consisted essentially of soya bean flour, flavored with cocoa and salt. The purchaser was told to substitute a heaping teaspoonful of Stardom's Hollywood Diet in the place of her breakfast and another teaspoonful in the place of her luncheon. Such a teaspoonful would furnish less than 31 calories, while the normal breakfast should call for about 500 calories and the normal luncheon for about 700 calories.

The latest preparation of the food powders type is one that goes by the name of Minamin. This is said by its exploiters to be "a concentrate of the essential minerals and vitamins in the proper proportion." It appears that the thesis on which the use of this preparation is predicated is that most fat persons consume more food than they need because most food "is deficient in vitamins and minerals." The corollary is that by taking Minamin "this deficiency of everyday diet is corrected, the diet is balanced, and the individual finds that a reasonable intake of food now satisfies." Even assuming this theory to be correct, and that is indeed a violent assumption, it must be obvious that the amount of mineral and vitamin deficiency would vary with the individual's usual diet and that no one product of fixed composition could contain the amount of minerals and vitamins "in the proper proportion" to make up the deficiency. Minamin is a powder that is to be taken in the place of the usual breakfast and luncheon. Analysis indicates that it is essentially powdered wheat germ. The recommendation is a teaspoonful of Minamin in a glass of orange juice in the place of breakfast and the same in the place of luncheon. A teaspoonful of Minamin would furnish about 30 calories! That is not all. The overfat are told that even with the dinner there must be "no sweets, no bread, no sugar."

So much for the general discussion of preparations in the weight reduction field and the facts that have been given regarding those specific preparations that have been classed as food products. I shall also list briefly some of the "obesity cures" of the chemical type, both for external and for internal use, together with condensed statements on what has been reported regarding their composition.

CHEMICAL SUBSTANCES FOR INTERNAL USE

PASTES.—Of the external preparations in the form of pastes to be applied to the surface of the body, there have been:

Absorbit.—Lard, oil, beeswax and a small amount of ox bile.

Fatoff.—A paste containing 10 per cent soap and 90 per cent water.

Morlene.—A gelatinized mixture of alcohol, soap, sodium iodide and sugar.

Nature's Way Reducing Cream.—Petrolatum, mineral oil, beeswax, Epsom salt, baking soda and alum.

Slendaform.—Oil of turpentine and white vinegar made into an emulsion with casein, dried milk curd.

SOAPS.—Of the soaps that have been sold as "obesity cures" there were:

Folt's Reducing Soap.—Soap artificially colored and containing a minute amount of iodine.

La-Mar Reducing Soap.—Soap to which small amounts of sassafras and potassium iodide had been added.

BATH POWDERS.—There have been innumerable bath powders sold under the alleged claim that they would reduce the weight of those who used them. Among these have been:

Clark's Thinning Salts.—Crystallized washing soda, perfumed.

Every Woman's Flesh Reducer.—Epsom salt, alum, camphor, soda and citric acid.

Fayro.—Impure Epsom salt and common table salt.

Florazona.—Made up mostly of sodium thiosulphate, the "hypo" used by photographers, with small amounts of baking soda, a trace of iodides, and perfume.

Lesser Slim Figure Bath.—A powder of corn-starch with smaller amounts of borax, baking soda and tartaric acid; and one large tablet of baking soda, table salt and tartaric acid.

Louisenbad Reduction Salt.—Glauber's salt, table salt and potassium chloride.

Nikola.—Dried washing soda with a trace of common table salt.

Sangra Bath Salts.—Epsom salt, colored.

San-I-Sal.—Epsom salt with small amounts of baking soda and table salt.

CHEMICAL SUBSTANCES FOR INTERNAL USE

CHEWING GUMS.—Of the preparations of a chemical type for internal use, there should be briefly mentioned first a few products in the form of chewing gum that have been put out as obesity cures. Of these there were:

Elfin Fat-Reducing Gum Drops.—Essentially sugar and the laxative drug phenolphthalein.

Silph Chewing Gum.—A chewing gum of the chicle type containing sugar, thyroid substance, pokeroot and bladderwrack, or seaweed.

Slends Reducing Gum.—A chewing gum having for its essential ingredient phenolphthalein.

PILLS, LIQUIDS, SALTS, ETC.—The pills, salts and other preparations for internal administration as alleged obesity cures have appeared by the hundreds. Some of these are given in the following list:

Aldinol.—Listed by the Federal Food and Drug Administration as a dinitrophenol preparation.

Allen's Anti-Fat.—Salicylic acid, potassium iodide, glycerin and bladderwrack.

Arbolone.—Tablets containing thyroid substance.

Antipon.—Citric acid dissolved in water and colored red.

(Continued on page 66)

How I Lost 62 Pounds Ugly Fat In 3 Months

Without harmful dieting or drugs

Margaret George

Simply Drank Delicious Germania Herb Tea With Meals—Fat Dropped Off Like Magic

SIXTY-TWO pounds of fat in three months was the welcome loss in weight I registered without taking any harmful drugs or salts—without violent exercising and without going hungry for a single minute.

One delicious cupful of Germania Herb Tea, obtainable at grocers and druggists, which I drank with each of my meals, I hold responsible for the loss of all my ugly fat and the return to me of a youthful strength and energy I hadn't possessed in years.

Each cupful of Germania Herb Tea, authorities agree, supplies minerals which the body needs, and which are often lacking in ordinary diet. Made of herbs grown on the sunny slopes of hills and mountains in Germany, Germania Herb Tea is directly a tonicinic product containing no harmful drugs. It tastes just like ordinary green tea. It is made the same way and you can drink it, either hot or iced as iced tea, with lemon, cream or sugar.

Delicious, I found it; and many women I know who drink it say the same. But getting rid of 62 pounds of fat cannot be accomplished by drinking any ordinary tea. Remember: you must drink Germania Herb Tea—and the remarkable thing about it is you lose weight without going on a fruit starvation diet that ruins you down and makes you weak and unsightly. I just sought every day and each day I ate what I wanted, felt better and grew stronger. The body simply must have plenty of good, wholesome food, and of the right kind, containing vitamines and other necessary substances to sustain life, build strength and energy.

Lost 3 lbs. a Week

Weeks by the thousands have written me and me of wonderful results obtained from drinking Germania Herb Tea. One friend in Pittsburgh writes: "I lost 18 pounds in six weeks with Germania Herb Tea and feel fine. I think it is great and I am recommending it to all my friends." And here is another typical letter I feel should be read by every fat man or woman: "Before using Germania Herb Tea you told me: 'These are not just packages of Germania Herb Tea. I have just finished my two months' supply and am very pleased with results. I am telling all my friends. I have lost 12 pounds and feel fine. You may use this letter to help others."

How It Works

Now you can easily and quickly get rid of excess unhealthy fat with utter safety and keep the face free from the wrinkles and haggard looks that freak dieting produces. Excess fat is usually caused by abnormal body conditions. Lose ugly fat without weakening your body, by normalizing your system the safe, delicious and inexpensive Germania Herb Tea way. Start today — regain youthful strength and energy. Feel better than you have in years and at the same time lose from 2 to 4 pounds of fat a week.

You can get Germania Herb Tea at all high-class grocery, drug and dept. stores. If any less than 6 a day—a 35 lb package makes 35 cups of tea. You must be delighted with results.

Insist on the original genuine, safe and reliable Germania Herb Tea and refuse all substitutes, because there is nothing "just like it." Get Germania Herb Tea today

This is my photograph, taken before I started to drink GERMANIA HERB TEA. I used to be so tired and weak that I could hardly walk or work.

This is how I look now. I am 38 years old, work 14 hours each day, an my feet all the time and enjoy it. Be sure to come and meet me. I would love to tell things over with you.

FREE DEMONSTRATION

Margaret George is now touring the United States. She is appearing in person in leading Department and Food Stores of the larger Cities—Watch your local newspapers for announcements — See Margaret George's own photographs and hear her wonderful experience from her own lips.

GERMANIA HERB TEA

Serve with Lemon Cream or Sugar

Delicious - Hot or Iced

GERMANIA TEA CO.

Obtain at Food, Drug and Department Stores, or write Germania Tea Sales Co., 815 E. Illinois St., Chicago

Germania Tea is essentially senna, with small amounts of other herbs.

The Federal Trade Commission, which ordered that the Fayro Laboratories, Inc., should abandon certain false and misleading statements made for their product, declared that this alleged obesity cure was composed mainly of Epsom salt, with small amounts of table and Glauber's salt.

Now You Can Reduce 2 to 4 Lbs. in a Night

Eat what you please
Wear what you please
Do what you please
Take no risky medicine

Send the coupon for your first three Fayro Baths

Thousands of smart women have found this easy way to take off 2 to 4 pounds once or twice a week. These women take refreshing Fayro baths in the privacy of their own homes.

Fayro is the concentrate of the natural mineral salts that makes it as effective as are the waters of the hot springs of America, England and Continental Europe. For years the spas and hot springs bathing resorts have been the retreat of fair women and well-groomed men.

Excess weight has been removed, skins have been made more lovely, bodies more shapely and minds brighter.

The Hot Springs Are Now Brought to You

You can now have all these benefits in your own bath. Merely put Fayro into your hot bath. It dissolves rapidly. You will notice and enjoy the pungent fragrance of its balsam oils and clean salts.

Then, Fayro, by opening your pores and stimulating perspiration, forces lazy body cells to sweat out surplus fat and bodily poisons. Add Fayro to your bath at night and immediately you will lose from 1 to 4 pounds in an easy, refreshing and absolutely harmless manner.

Your physician will tell you that Fayro is certain to do the work and that it is absolutely harmless.

Fayro will refresh you and help your body throw off worn out fat and bodily poisons. Your skin will be clearer and smoother. You will sleep better after your Fayro bath and awaken feeling as though you had enjoyed a week's vacation.

Lose Weight Where You Most Want To

Fayro reduces weight generally, but you can also concentrate its effect on abdomen, hips, legs, ankles, chin or any part of the body you may wish.

Results Are Immediate

Weigh yourself before and after your Fayro bath. You will find you have lost from 2 to 4 pounds. And a few nights later when you again add Fayro to your bath, you will once more reduce your weight. Soon you will be the correct weight for your height. No need to deny yourself food you really want. No need for violent exercise. No need for drugs or medicines. Merely a refreshing Fayro bath in the privacy of your own home.

Try Fayro at Our Risk

The regular price of Fayro is $1.00 a package. With the coupon you get 3 full sized packages and an interesting booklet "Health and Open Pores" for $2.50 plus the necessary postage. Send no money. Pay the postman. Your money refunded instantly if you want it.

HERE'S PROOF

Read what Fayro Baths have done for others

"Three Fayro baths reduced my weight 11 pounds in 6 days. I feel better than I have felt for years."

"I weigh 16 pounds less and feel younger and sleep better. Fayro is wonderful."

"My double chin vanished in the magic of Fayro baths."

"My hips were eleven inches smaller until I commenced Fayro baths. I have lost 12 pounds."

"Thank you for Fayro. I had to bounds in three weeks; feel better and certainly look better."

"Since childhood my thick ankles have always been a source of embarrassment. Fayro baths have reduced them beautifully. I thank you very much."

For obvious reasons, names are not quoted, but every letter published has been authorized and names and addresses will be given on request.

FAYRO

If each healthful bath of Fayro does not reduce your weight from 1 to 4 pounds, we will refund your money without a question. You risk nothing. Clip the coupon and mail it today

Fayro, Inc. Lb. 1-16-29
635 Locust St., Pittsburgh, Pa.

Send me 3 full sized boxes of Fayro in plain package. I will pay the postman $2.50 plus the necessary postage. It is understood that if I do not get satisfactory results with the first package I use, I am to return the other two and you will refund all of my money at once.

Name .....

Address .....

City ..... State .....

If you live outside the United States send International Money Order with coupon.

Femininity Outdoors

Acme

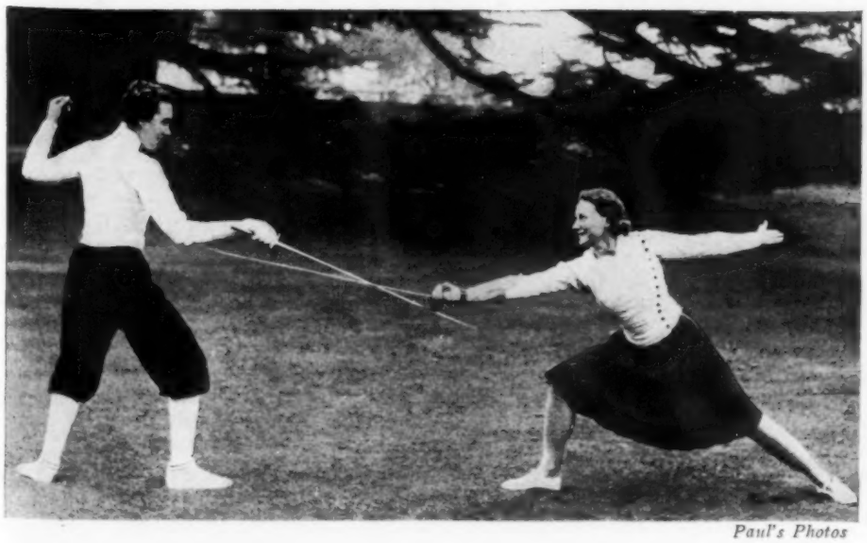
A cart to pull is an incentive to any child to run and play outdoors. The child in the picture above is watching one being made at the San Francisco branch of the State Emergency Relief Administration toy project, where many men are put to work restoring cast-off toys.

Acme

An opportunity to participate in outdoor volleyball and in many other fields of athletics is offered female students at the University of Southern California.

Paul's Photos

Even blindness does not prevent these English women of the Sports Club for the Blind from enjoying rowing. This foursome recently won the sculling championship of rowing clubs for the blind.



Paul's Photos

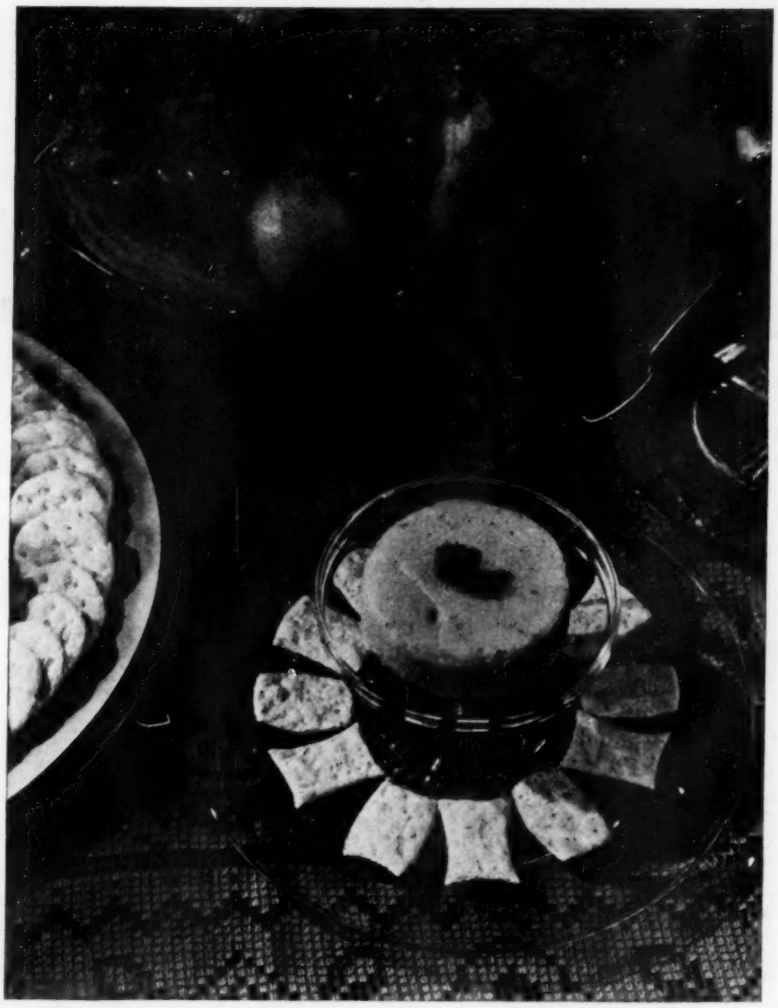
England's champion lady fencer, Judy Guiness, at the left, practices in her garden with the runner-up, Gwen Nelligan.

A HOUSEWIFE LOOKS at

XVI. Committee Acceptance of Cheese

THE FAMILY budget maker who seeks economical foods may well consider bread and cheese, the simple fare of the peasantry, with hot soup, lettuce and fruit to round out the meal satisfactorily. She will find that many kinds of cheese have been accepted by the Committee on Foods of the American Medical Association.

Within recent years many varieties of cheese not formerly known to the average housewife have attained popularity in the American market. Attractive packaging and display have added their appeal, and the housewife today may make her selection from a stock much more varied and appetizing than that which was available in the days when the grocer had only one kind of cheese, from which he sliced off wedges and wrapped them for his customers from day to day. Aside from cheese with apple pie or cheese with macaroni, this food was little used except among the European born and their immediate descendants when factory-made cheese first became common in our country. Today, cheese has assumed new popularity among strictly American stock, with the clever hostess preparing attractive cheese trays and modern advertising making us aware of the wide variety of cheese available.



WITHIN RECENT YEARS MANY VARIETIES OF CHEESE NOT FORMERLY KNOWN TO THE AVERAGE HOUSEWIFE HAVE ATTAINED POPULARITY.

The Committee on Foods demands that advertising shall actually tell the truth. When scientific information on nutrition is given, it must be expressed in a simple, understandable way for readers who do not know a great deal about science. It must tell the story without misrepresenting or giving a false impression. Scientific facts must not be exaggerated or distorted to suit the advertiser's own purposes. The nutritional qualities of a food may be stated, but advantage should not be taken of the fact that readers are uninformed and are liable to give undue importance to any exaggerated nutritional claims.

One pound of cheese represents the solid ingredients of 1 gallon of milk, although it does not furnish the same nutritional value as milk, for it does not contain the whey. However, because of its high protein content and nutritional value, it may replace meat in a part of the meals.

A RECENT Committee decision which is particularly important to home makers, whether they consider milk as a beverage or milk as used in cheese making, says:

> Milk is an excellent medium for many dangerous bacteria as well as an excellent food for man. Disease germs may enter the milk directly from an ailing cow, be introduced by insects, or be transferred to the milk by the fingers or mouth-spray of persons having to do with the collection or transportation of milk.
>
> Once in the milk, some of the disease germs may multiply enormously. Extensive epidemics of typhoid, scarlatina, diphtheria, septic sore throat and other diseases are sometimes caused by contamination of milk supplies. Numerous cases of tuberculosis and undulant fever have been caused by raw milk.
>
> Even when great care is used in overseeing the health of the cattle and of the milkers and in maintaining the cleanliness of the dairy, there remain many

the COMMITTEE ON FOODS

possibilities of contamination. A milker may become overnight an unwitting carrier of some disease germ in his nose or throat; a typhoid carrier might be unknowingly employed in a most carefully conducted dairy.

Since disease germs are readily destroyed by well established methods of pasteurization, all milk for direct human consumption or for use in ice cream, cheese or other milk products should be pasteurized according to officially approved methods. After pasteurization the milk should be so stored and protected that it will not be contaminated. Liquid pasteurized milk should be retailed in sealed bottles.

The pasteurization of milk is a public health measure. The public should demand pasteurized milk for drinking and the use of pasteurized milk in milk products. The dairy trade should universally adopt pasteurization in the interest of public health.

There is no cogent evidence that pasteurized milk is significantly inferior nutritionally to raw milk.

The milk used for cheese making must be clean and safe, in order to meet the high standards for acceptance by the Committee on Foods. At a certain cheese factory the milk is received early in the morning. The weight is checked, and a sample of each lot is taken for analysis. The milk is then allowed to flow into a vat containing from 3,000 to 4,000 quarts, and it is heated to a temperature of about 86 F. by letting steam into the water surrounding the bottom and sides of the jacketed vat. A lactic acid "starter" or culture is added to the milk and thoroughly mixed into it with a "cheese rake." Cheese color is added for the trade that demands a yellow cheese. Next, rennet is added, about 3 ounces of rennet mixed with water being used for 1,000 pounds of milk; it is mixed thoroughly. The milk is then left undisturbed until it is clabbered, just as one allows junket to set when one makes a dessert. The curd is cut in cubes and stirred gently to keep the cubes apart so that the whey may be drained off the curd.

CHEDDARING or milling the curd is the next process, which is the distinctive feature of the Cheddar method of cheese making. It consists of piling or matting the curd, cutting the curd into strips and continuing the operation of piling and repiling. When one merely asks for "cheese" at the grocery, one gets Cheddar cheese, named after the English village where the method of making it was originated. This cheese is commonly known as American cheese, factory cheese or store cheese, since it is the kind that was commonly made in early cheese factories and sold in country stores.

The mass of curd is salted and stirred to distribute the salt. It is then cooled and pressed. There are various shapes into which American cheese is molded; these are known as Longhorns, Young Americas, Prints, Daisies, Flats, Twins and Cheddars. After several hours in the press, the cheese is stored in curing rooms at a temperature of from 40 to 65 F. A series of changes in the protein occurs during the curing of Cheddar cheese. The lower the curing temperature, the slower is the curing process and the better the quality of the finished cheese. The finished cheese contains sufficient moisture for bacterial growth. The flavor of Cheddar cheese, at least in part, is due to bacteriologic processes, although certain enzymes or the micro-organisms present in the milk play important rôles.

THE Committee on Foods requires assurance that its accepted foods are produced under sanitary conditions. The strong odor of many cheeses is not an indication of spoilage or that the cheese is unwholesome. These odors arise from the chemical changes occurring during the ripening process. Even the odorous Limburger, first produced in a Belgian town of that name, is now made in America under conditions which are absolutely sanitary. A pasteurized Limburger is offered in jars; it is thus freed from the rind, which was the most odorous portion, and its milder flavor appeals to popular taste.

The various kinds of cheeses were originated in quaint villages, and many of them were discovered by accident, as when a young explorer in the damp caves near the French village of Roquefort found that fresh cheese in a lunch, left some days previously, had become particularly delicious, due to the molding of the bread of the sandwiches. That particular type of mold is now grown on bread; it is then dried and sprinkled over the curd. After the mold has been allowed to ripen for from three to five days, the cheese is rubbed with salt daily for about ten days. It is cured in rooms with controlled temperature, humidity and ventilation. The cheese is pierced with needles to permit free access of air to the interior to promote the growth of the mold. The ripened cheese is honeycombed with veins of blue-green mold growing between particles of curd along the lines of the needle punctures. The flavor and aroma are due principally to acids developed by the action of the mold on the fat in the cheese. American Roquefort cheese is fully as delicious as the imported kind. Many cases of

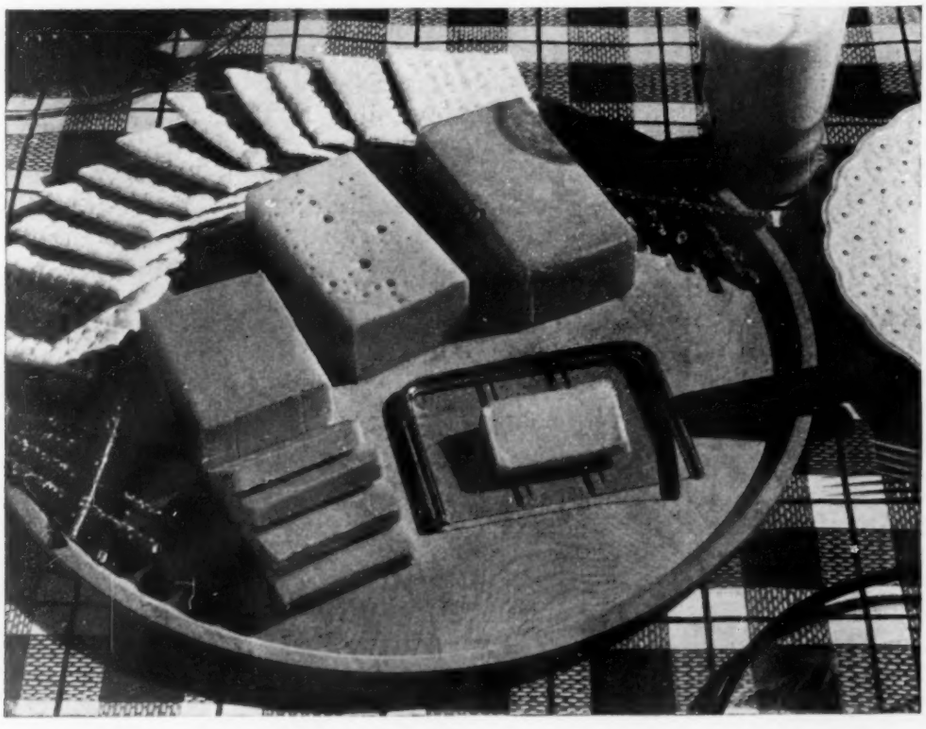
By DORIS W. McCRAY

trying to duplicate the flavor of a foreign cheese have resulted in the production of an even finer flavor. Dutch types of cheese, whether imported from Holland or made here, include Edam, a semihard cheese, molded in round balls, mild and slightly salty, and Gouda, a smaller cheese similar in flavor. Italian types are Gorgonzola, Parmesan and Italian grated cheese. Swiss types include Swiss Gruyere and what is commonly known as Swiss cheese, with the holes, or "eyes." The "eyes" indicate quality in this type of cheese; they should approach uniformity in size and placement and not be too large or too small. French types of cheese include Camembert, Brie, Roquefort and Oka, a mild yellow cheese from Canada. Camembert is a soft cheese covered with a hard rind consisting of dried cheese and mold. Its interior is soft, yellowish and creamy. As the cheese ripens, the interior becomes soft enough to spread, and the odor becomes stronger and more characteristic. This cheese must be refrigerated, and it does not keep for any considerable length of time. German types are Liederkranz, Limburger and brick cheese, a milder cheese with flavor similar to Limburger. Cream cheese, or "Philadelphia" cream cheese, is distinctly American.

THE U. S. Department of Agriculture has defined a number of well known cheeses; and cheese must conform to these definitions, be correctly labeled and contain the specified minimum percentage of milk fat. Last year fourteen seizures and nine criminal prosecutions were instituted by the Federal Food and Drug Administration in cases in which the butterfat was low and the moisture excessive. About 8 per cent of the working time of that administration was taken up with violations of the food law of dairy products, chiefly butter and cheese. In this connection it is interesting to note that if a product is not labeled "cheese" but is similar in appearance, consistency and eating qualities and is sold as a cheese substitute, it does not have to meet the federal definition for cheese. The label may state how it differs from standard cheese; for example, that it is a mixture of cheese, concentrated whey of milk, flavorings and the like, or that it is intended as a sandwich spread. Some truly delicious products of this kind are on the market, and the addition of the whey of milk naturally adds nutritive value of a type slightly different from that found in the cheese portion of the ingredients.

SUCH a product has been accepted by the Committee on Foods. It contains 25 per cent of butterfat and 43 per cent of moisture, is a rich source of vitamin G, the antipellagra vitamin, and is also rich in vitamin A; it melts readily. The truth of these statements in advertising which bears the Seal of Acceptance of the Committee on Foods need not be questioned. Characteristic properties including its physical consistency as well as its nutritional differences distinguish it from the generally recognized cheese of the past.

A similar, accepted product, which bears a trade name, is defined as a pleasing combination of "process" cheese, milk proteins, milk sugar and milk minerals; the last three constituents are furnished in concentrated whey of milk. The manufacturer claims a definite vitamin A and B potency for the cheese and maintains that it furnishes 92 calories to the ounce. American Cheddar cheese, meeting the require-



THE CLEVER HOSTESS PREPARES ATTRACTIVE CHEESE TRAYS, AND SHE MAY CHOOSE FROM A WIDE VARIETY OF AVAILABLE CHEESES.

ments of Wisconsin, is used in the manufacture, and the plant and equipment are kept in strictly sanitary condition, the kettles, filling machines, pipes and conveyors being cleansed and steamed each night.

In order to be acceptable to the Committee on Foods, cheese must meet federal requirements, as follows:

1. Cheese is the product made from curd obtained from the whole, partly skimmed, or skimmed milk of cows, or from the milk of other animals, with or without added cream, by coagulating the casein with rennet, lactic acid, or other suitable enzyme or acid, and with or without further treatment of the separated curd by heat or pressure, or by means of ripening ferments, special molds, or seasoning. In the United States the name "cheese" unqualified, is understood to mean Cheddar cheese, American cheese, American Cheddar cheese.
2. Whole milk cheese is cheese made from whole milk.
3. Partly skimmed milk cheese is cheese made from partly skimmed milk.
4. Skimmed milk cheese is cheese made from skimmed milk.

Whole milk cheese includes several kinds, all of which are defined by the federal government. Cheddar cheese is the cheese made by the Cheddar process from heated and pressed curd obtained by the action of rennet on whole milk, after which the milk whey is discarded. It contains not more than 39 per cent of water and, in the water-free substance, not less than 50 per cent of milk fat.

Pineapple cheese is Cheddar cheese put into a net which molds it in the shape of a pineapple; it does not contain any pineapple but is merely named after the mold form. During the ripening, the cheese is thoroughly coated and rubbed with a suitable oil. It contains, in the water-free substance, not less than 50 per cent of milk fat. Limburger cheese is the cheese made by the Limburger process from unpressed curd obtained by the action of rennet on whole milk. The curd is ripened in a damp atmosphere by special fermentation. It contains, in the water-free substance, not less than 50 per cent of milk fat.

OTHER cheeses are defined as those produced by the special method of cheese making that gives the cheese its name, with the milk fat content in the water-free substance forming a part of the definition in each case. Whole milk cheeses defined include brick cheese, which contains 50 per cent milk fat; Gouda cheese, 45 per cent; Neufchatel cheese, 50 per cent, and cream cheese, 65 per cent. Stilton, Roquefort and Gorgonzola are also listed as whole milk cheese.

Whole milk or partly skimmed milk cheeses include Emmenthaler, commonly called Swiss cheese, 45 per cent milk fat; Camembert, 45 per cent, and Brie, Edam and Parmesan.

Skimmed milk cheese, or cottage cheese, is delicious as made by large dairy companies. Since it is perishable, it should be stored only a short time even under refrigeration. It may be mixed with cream and seasonings before it is offered for sale. Whey cheeses are sold under various names. Whey is defined as the product remaining after the removal of fat and casein from milk in the process of cheese making.

Pasteurized cheese, or pasteurized-blended cheese is the pasteurized product made by comminuting and mixing, with the aid of heat and water, one or more lots of cheese into a homogeneous, plastic mass. The names "pasteurized cheese" and "pasteurized-blended cheese," unqualified, are understood to mean pasteurized Cheddar cheese and pasteurized-blended Cheddar cheese, and they apply to products which conform to the standard for Cheddar cheese. Pasteurized cheese or pasteurized-blended cheese bearing a varietal name is made from cheese of the variety indicated by the name and conforms to the limits for fat and moisture for cheese of that variety.

EMULSIFIED cheese, or process cheese, is the modified cheese made by comminuting and mixing one or more lots of cheese into a homogeneous, plastic mass, with the aid of heat, with or without the addition of water, and with the incorporation of not more than 3 per cent of a suitable emulsifying agent. As with pasteurized cheese, when the names "emulsified cheese" and "process cheese" are unqualified, they indicate Cheddar cheese or, with a varietal name, any of a number of other varieties.

Pasteurized-blended cheese is a wonderful improvement over the old-time cheese. There are blended together a mild and a ripe cheese, to suit popular taste and to produce absolute uniformity in a certain brand of cheese which is not possible in the original manufacture of the cheese. Pasteurized cheese in tinfoil wrappings or in jars is extremely popular as it remains moist and palatable. When used in cookery, this type of cheese has the special advantage of melting and blending readily with other ingredients used.

As a rule, in the hard cheeses the microorganisms which produce the "ripening" are distributed through the cheese mass and therefore act in a fairly uniform way throughout the cheese. In the soft cheese the organisms are mostly on the surface and gradually penetrate through the mass; hence the soft cheeses must be made in small size. The soft varieties of cheese are: Brie, Camembert and Neufchatel. Between the two groups of soft and hard cheeses are the semihard: brick, Muenster, Limburger and Liederkranz. A complete list of cheeses would resemble a geography lesson and would include some 200 varieties, designated by 400 different names.

I have been using a cream cheese prepared from pasteurized cultured sweet cream seasoned with salt. In accordance *(Continued on page 91)*

Two Common Intestinal Worms

Chapter VIII of OUR PARASITES

By
CLAUDE
LILLINGSTON

IF THE EGGS OF THE ROUNDWORM ARE DEPOSITED WITH MANURE IN A KITCHEN GARDEN WHERE LETTUCES AND OTHER COMPONENTS OF A SALAD ARE CULTIVATED, THE WAY TO THE NEW HOST'S MOUTH IS ASSURED, UNLESS THE PRODUCE IS COOKED OR CAREFULLY WASHED.

IN THE large group of nematodes there are two members which have particularly distinguished themselves by the frequency with which they invade the intestines of man. One, Ascaris lumbricoides, is so large that it outclasses in size the earthworm with which we baited our hooks in the piscatorial days of our youth. The other, Oxyuris vermicularis, is so small that the male member of the family is only just visible to the naked eye, and the female appears like a short fragment of white thread. Yet this giant worm and dwarf worm have many features in common. The mouth is terminal; that is, it is at one end in all the members of this group. These worms do not have specialized circulatory or respiratory systems, but they are provided with nerves. They also have muscles and an excretory system serving the functions of kidneys. Their bodies are more or less cylindric. Neither of these two worms requires an intermediate host, as do the flatworms and many other parasites.

That most ubiquitous worm, Ascaris lumbricoides, accompanies man wherever he goes, whether in the arctic regions or the tropics. Warm climates are preferred but are not essential. The worm is no respecter of persons, and it takes up its abode with the rich as well as with the poor. It is more common in the country than in towns, probably because of the lack or comparative inadequacy of sanitary measures, especially as regards the proper disposal of feces.

Ascaris lumbricoides, commonly known as the roundworm, passes the sexual phase of its life cycle in the human intestines. The male measures from 15 to 25 cm. in length and has a strongly curved tail. The female measures from 20 to 40 cm.; she is a rather stout creature with a girth of 5 mm. Both male and female taper off at both ends, and their color is grayish yellow or pinkish. The minute size of the eggs is more than compensated for by their numbers, which run into millions in a single female worm. The feces may teem with them to such a point that if only a pinhead of fecal matter is moistened with a little water and examined under a microscope, several eggs may be found.

As long as they are in the intestines of their original host, the eggs do not develop further. This means that the life cycle of the worm cannot be completed in the original host; it must make its way into the outer world and undergo certain changes before resuming life in the alimentary canal of human beings. In other words, autoinfestation is impossible; successive generations of the worm do not develop in the same host without emigration and a period of roughing it in the outer world. The eggs having escaped with the feces and been deposited in moist surroundings, the embryos within them develop slowly, a process requiring about two weeks in the summer and several months in the winter. The eggs may survive in a state of suspended animation for years, in spite of droughts in the summer and frosts in the winter.

If the eggs have the good fortune to be deposited with manure in a kitchen garden where lettuces and other components of a salad are cultivated, the way to the new host's mouth is assured, unless the produce is cooked or carefully washed. Infestation may follow the drinking of water from a contaminated source as well as the eating of raw vegetables. When the egg has reached the small intestine, the embryo inside it breaks the shell and proceeds to wander on its own account. Observations on the journey of the roundworm in experimental animals such as the rat and mouse have shown that the larva is not content to remain at home in the small intestine but insists on piercing it and making its way first to the liver and then to the lungs. According to the observations of parasitologists, the larva deserts the lungs beginning about the eighth day after infestation by traveling up the windpipe and down the esophagus in order to reach the stomach, whence it returns to the ultimate goal of its travels, the small intestine, in which it turns into an adult worm. According to Maurice C. Hall, there is abundant evidence to show that the ascaris larvae pursue the same route in man's body.

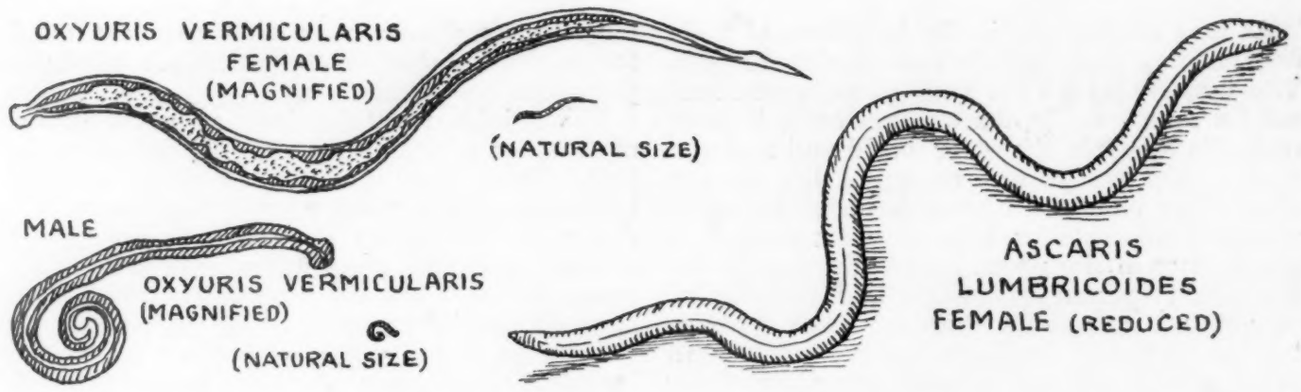
There is hardly an organ in the body into which this importunate parasite has not penetrated in some case or other. This tendency to be ubiquitous partly explains the great variety of symptoms which the worm may provoke in its host. Children are liable to suffer from nightmares and colic as the result of the activities of these worms. The worms may also cause such profound disturbances that the symptoms are mistaken for those of typhoid, appendicitis or even cholera. The very bulk and number of these parasites may be responsible for alarming symptoms; it is obvious that when a child harbors several hundreds of these big worms, the space they occupy is considerable; and clustered together they may cause intestinal obstruction. When they climb up the biliary passages, they may obstruct the flow of bile and thus induce jaundice. They are a dangerous nuisance even after they are dead, for a dead worm in the intestines produces poisonous substances.

This brief account far from exhausts the list of troubles which the worm may bring on its host. There may, of course, be cases in which host and guest live in comparative peace, the one with the other; but there is never any guarantee that the guest will always observe the conventional rules of hospitality. Therefore steps should be taken to expel the parasite as quickly as possible and to prevent its return. Preventive measures are most important. As long as water supplies are polluted and sewage disposal is so faulty that human dejecta are employed as manure in kitchen gardens, there is little prospect of exterminating these parasites. Expelled at the back door, they will return, perhaps many months later, by the front door with the nonchalant impudence of the inveterate tramp. In infested areas, therefore, it is necessary to boil all the drinking water and to see that all the vegetables and fruit that are eaten raw are well washed in boiled water before being eaten.

The two drugs commonly given to expel roundworms are santonin and oil of Chenopodium. In parts of the tropics and in some countries in which roundworms are particularly prevalent, children are given santonin twice a year as a matter of routine. After it has been given, a laxative is administered to facilitate the expulsion of the worms paralyzed by the santonin. Since alarming symptoms have occasionally followed medication with santonin, its supervision by a doctor is essential.

Oxyuris vermicularis, commonly known as the threadworm, seatworm or pinworm, is a familiar parasite in the intestines of children of all countries. The comparatively large female worm looks like a short piece of fine, white, slowly moving thread. She is about 1 cm. long, and her tail end tapers gently into a fine point. Hence the term "Oxyuris," which is derived from the Greek word meaning the sharp tail. Compared with the female, the male is a despicably insignificant little creature whose tail curls on itself in an abrupt spiral. It ends with clumsy suddenness, in marked contrast to the tapering slimness of the delicately modeled female tail. The male measures only a paltry 5 mm. from one end to the other and is difficult to find in the stools without a magnifying glass. This difficulty is enhanced by the fact that the males are less numerous than the females. Mating occurs high up in the small intestine, near the duodenum. His rôle in life being accomplished, the male then disappears from the scenes and is heard of no more.

The female's career is, however, far from being ended at this stage. Laden with eggs, she lets herself be swept down the small intestine and then down the large intestine, occasionally



lodging in the appendix on her way, and sometimes setting up a mild form of appendicitis. Having reached the lowest section of the large intestine, she attaches herself by her head to its lining. Thus safely anchored, she pours forth a stream of eggs which pass with the stools into the outer world. She is occasionally swept out with them. Or, when the child is warm in bed at night, she may wander forth on her own account and provoke that troublesome itching which is such a characteristic feature of pinworm infestation.

THE minute, oval eggs can be recognized under a microscope by their curious shape; they are much flatter on one side than on the other. Even before they are laid, these eggs contain fairly well developed embryos which remain imprisoned in the shell for a considerable time unless conditions for hatching are ideal. The embryo has the choice of two careers. The simplest and shortest is to escape from the shell almost as soon as the egg is discharged from the intestines. Having turned into a larva, the embryo returns whence it came, up the large intestine, and then up the small intestine, at the upper end of which it reaches maturity and completes the life cycle. The worm's ability to take this short cut means not only that it is independent of an intermediate host but also that measures limited to preventing reinfestation by the mouth are liable to be ineffective.

The other, more enterprising career followed by the embryo entails a sojourn of several days and even weeks in the outer world. During this sojourn, the embryo, still in its shell, lurks under the finger nails of its host and in many other crannies. Or it may be carried with the stools unwisely used to manure a kitchen garden, the vegetables of which are eaten raw by the unsuspecting child. Flies may also be carriers of the embryo, picking it up from the soil and depositing it on food. There are various other ways by which the embryo may travel to the mouth and thence to the upper tracts of the small intestine, there to turn into a mature male or female worm.

In addition to the troubles already mentioned to which this parasite may give rise, there are several others which contribute not a little to its objectionableness. The itching may be followed in due course by eczema, which in its turn enhances the itching and is a source of much restlessness and distress on the part of the child. Perversions of appetite and even convulsions have also been traced to the activities of this worm, which is also responsible for changes in the white cells of the blood. The significance of these changes is still obscure, but the other charges against the worm are quite numerous and serious enough to warrant stern measures.

If treatment is to be successful, certain facts of primary importance must always be borne in mind. The first is that there are often several infested children in the same family or house; as long as there are some children but not all in a community who are rid of their worms, they may become reinfested from their playmates. Another important fact is the capacity, already mentioned, of the parasites to complete one life cycle after another always, or almost always, within the same host. It follows that the casual administration of one or two doses of a purgative, or an enema or two, is not likely to make a clean and permanent sweep of the parasite in all its phases.

IN THIS connection, an instructive experiment was made on himself many years ago by the Italian, Grassi, who deliberately swallowed six female pinworms. At the end of fifteen days their progeny began to appear in the stools. They continued to do so for more than a month, evidently because the development of all the eggs and worms did not proceed at the same rate. As successive swarms of the parasite may thus continue to arrive at maturity over a period of several weeks, treatment is not going to be successfully radical unless it is continued all this time.

A system of treatment, based on a knowledge of the foregoing facts, consists of giving every day for at least twenty days a laxative which will assure an evacuation of liquid stools at least twice a day. In this way, the parasite is kept continuously on the run, and the storm allows no lull during which the parasite can quietly return in the larval stage to its old haunts. For, it should be noted, the embryo in its shell is comparatively helpless, having to

follow the current, whereas the adult worm is able actively to attach herself to the walls of the intestine. The choice of laxative is a matter of comparatively little importance, for the success of this treatment depends entirely on its mechanical effects and not on any specific chemical action on the part of the laxative on the worm.

This medicinal treatment must be supplemented by various measures designed to prevent reinfection. The tendency of children to reinfect themselves by scratching the itching parts and then sucking their fingers may be countered by stout pajamas or a long nightdress tied below the feet. Finger nails should be kept short and clean; thumb sucking and nail biting should be discouraged, and gloves should be worn at night. The nocturnal irritation of the inflamed parts may be reduced by smearing them with a weak mercurial ointment.

To reduce the chances of one child infecting another, each should have a separate bed or cot. In families and public institutions much can be done to stamp out an epidemic of this nature by keeping privies always clean and by frequent changes of underclothing, bed linen and towels. Raw fruit and vegetables from questionable sources should be avoided or, if this is not possible, should be carefully washed. Experience has shown that if these concerted measures are conscientiously and consistently enforced, the pinworm can be expelled without a single laggard being left behind to carry on. It remains a universal pest because it can so easily profit by the neglect of one or another of the various measures which must all be taken if a complete cure is to be effected.

[NOTE.—In the February HYGEIA, Dr. Lillingston's subject will be "The Clothes Moth."]

HEALTHGRAMS ✣ from Articles in This Issue

¶The total number of American soldiers killed in battle in the World War was 53,000 whereas the number of persons killed by accident in the United States in a single year, 1931, was 97,000. *See page 40*

¶The body functions best with a room temperature of approximately 68 F., with a relative humidity of from 40 to 50 per cent and with the air in slow circulation. *See page 22*

¶To avoid severe and possibly fatal heart attacks, persons with weak hearts must revise their whole mode of life, including habits of work, diet, exercise and worry. *See page 12*

¶Three suggestions for giving children sex information are: to tell the truth, to tell it simply and to remember that little children are not embarrassed by the subject. *See page 16*

¶The great emphasis that has been placed on athletics, especially football, by nearly all our institutions of higher learning has put a tremendous handicap on the younger generation. *See page 30*

¶The absurdity, not to say the danger, of using purgative drugs as weight reducers should be obvious even to those without medical training. *See page 50*

¶The superman of the past suffered from the same dental ills as you and I; the same decay, pyorrhea, abscesses and "crooked teeth." *See page 26*

¶My record of 380 diagnoses in ten hours is, I believe, a world record at which members of the medical profession may care to shoot, it being understood that it was established without pains of accuracy or fear of consequences. *See page 34*

¶Cheese is particularly valuable for its calcium, as found in the milk from which it is made, for calcium is needed for building bones and teeth. *See page 56*

¶Poor appetite, poor digestion and constipation will frequently be found at the bottom of many chronic illnesses. *See page 38*

¶The reason tuna fish looks white one time and dark another is because the same species is not always purchased. *See page 67*

¶Foresight saves eyesight. No matter what the trouble, early attention is the shortest road to recovery. *See page 64*

¶The person who worries is not helped by it, and the person who lives within the worrier's sphere is made unhappy and insecure by it. *See page 43*

¶Between periods of practice the nervous musician should walk, bathe, sleep, read and take himself away from music if he can. *See page 46*

¶Raw fruit and raw vegetables from questionable sources should be avoided or, if this is not possible, should be carefully washed. *See page 60*

DISEASES OF THE EYES: GENERAL

Chapter VII of THE EYE BOOK

By
HYMAN COHEN

IN THE preceding chapters, I have dealt with eye troubles arising from faulty structure. I have discussed refractive errors, or natural delinquencies, which are not primarily disease states of the eye, and also such disturbances of cooperation and balance as squints and paralysis. Modes of correction and treatment were also discussed.

I shall now deal with the diseases of the eye that are of common occurrence. The general considerations will relate to causes, processes, symptoms, prevention, treatment and care.

Cause, in disease, is any agency that upsets the physiologic harmony of function. Sometimes the cause is bred within the individual; sometimes it is the result of a vital disagreement between the individual and the environment. A disease may be started on its way by one cause, but before long there are several causes at work, and there are also many effects. How humanity fares in this scrimmage is the burden of many stories that have been told and still more that remain untold.

But now to the eye, the fairest of all battle grounds, the not infrequent victim, often the blinded captive, of the war that is disease. The eye is attacked by the same disease processes that occur in any other part of the body. In addition it has its own peculiar troubles resulting from its optical nature. The disease-inducing agencies are inflammatory processes, bacterial and other forms of microbic invasion, disturbed metabolism, derangement of the exchange of fluids in the eye, nervous disease and disturbances, organic disease elsewhere in the body, injuries, tumors, poisons and developmental deficiencies.

A DISEASE process has a beginning, reaches a certain height and comes to an end. It may stop at any point. It induces other processes. A disease process is merely a departure from the physiologic norm; a little less or a little more work is done than should be done, or there is a perverted activity. Cause induces process. Process in turn becomes cause.

We are unaware of many things that happen, largely because they do not concern us. In like manner we do not know that anything is ailing us until the "falling together" (symptom) of one thing with another makes us unpleasantly or painfully conscious that something has gone wrong. When that happens we call it a symptom of disease, a danger signal.

PAIN IN THE EYE, A SHOUT OF DISTRESS
MISTAKEN FOR AN ORDINARY HEADACHE.
DIES CAUSES LOSS OF TIME WHICH SHOULD

The eye manifests such symptoms as are general to the body as a whole, as well as special evidences of disease that are peculiar to itself.

Cause begets process; process begets symptoms. When symptoms are recognized and correlated, the nature of the disease is established. This is termed diagnosis.

Of the great number of complaints and symptoms that have their origin in the eyes, there are four that are outstanding in their significance. They are danger signals that should never be allowed to go unheeded.

The first is the dimming of sight. This, especially when it is the only apparent symptom, is of the utmost gravity. It is all the more serious because, unattended by other symptoms, it is

CONSIDERATIONS

THAT CANNOT BE IGNORED, IS FREQUENTLY REPEATED DOSING WITH HEADACHE REMEBE GIVEN TO DIAGNOSIS AND TREATMENT.

liable to be overlooked for some time, especially when the vision in the fellow eye is good and masks the failing sight of the ailing eye. This loss of valuable time before examination and diagnosis are sought and treatment is instituted often results in complete loss of sight in the affected eye. Another deplorable thing that frequently happens in such cases is that the sufferer attempts to seek relief at irresponsible hands through the aid of spectacles when no glass in the world can do any good.

THE dimming of vision as the only symptom is usually gradual in its onset and development and accompanies a host of "silent" disease conditions. Sometimes it comes on suddenly, as when it is due to hemorrhage inside the eye.

Pain in the eye is a shout of distress that cannot be ignored. However, it is frequently mistaken for an ordinary headache, or an attack of migraine, a nervous disease marked by a periodic headache. Repeated dosing with headache remedies is resorted to, and so here also valuable time is lost before diagnosis and proper treatment are sought. Glaucoma, or hardening of the eyeball, is a disease in which the pain is intense and in which one or more attacks will sometimes render an eye blind.

Redness of an eye is a fiery challenge, the red flag of trouble ahead. There are degrees and kinds of redness, each of particular significance. It is usually associated with other symptoms. It always means serious trouble, except in instances of slight hemorrhage occurring under the conjunctiva, as sometimes happens in such diseases as whooping cough. Popular remedies in use, such as the application of a slice of pork or tea leaves or oysters, to the inflamed eye, may cause infection. An eye physician should be consulted.

DISCHARGE from an eye must not be confused with an excessive flow of tears, although the two often go together. What is here meant is a discharge of pus or a puslike secretion that gathers in the spaces under the lids and finally flows out. It is profuse, yellowish and thick in the terrible gonorrheal infection of the eyes of infants, ophthalmia neonatorum, and also when gonorrheal infection attacks the eye of an adult. The discharge may be caused by trachoma, a contagious granular disease of the lids, or it may be the result of an ordinary conjunctivitis, an inflammation of the conjunctiva. It is of great importance to ascertain the nature of the discharged matter by having it examined microscopically. If it is allowed to involve the other structures, the damaging consequences are dire. If the discharge is of a contagious nature, then the fellow eye and also the eyes of other members of the family and those of the attendant are in danger. A discharging eye is a powder magazine of disease.

Besides these four danger signals of a seriously sick eye, dimming sight, pain, redness and discharge, there are many other symptoms which will be described in connection with the several diseases to be discussed.

All disease is compounded, in part and in sum, from causes, processes and symptoms. In the case of the eyes, this interweaving pertains to the function of sight, the comfort of seeing, the cosmetic appearance of the eyes, and the relationship of eye disease to general bodily health as well as the relationship of general bodily health to eye disease.

The aim of education in the field of eye diseases is to prevent, whenever possible, the tragedies that befall the eyes and to insure, if sincere effort can do so, early attention to conditions which impair the sight or bring about the loss of it. The emphasis is on the safeguarding of the eye against disease. The means of accomplishing this is, in the first place, educational—to inform, to guide and to serve. Such service

reaches the effectual point when the means of information employed and those it seeks to serve are brought into understanding and sympathetic contact.

So far as the actual sufferers of eye discomfort and eye disease are concerned, self interest will further the message of prevention, if it does not come too late. For the many who are now putting up with sight discomforts and who are unaware of the development of more serious conditions that can be forestalled and prevented by early attention, dependence must be placed on their intelligent foresight and the lesson of many sad examples of procrastination.

Foresight saves eyesight. No matter what the trouble, early attention is the shortest road to recovery. A knowledge of the eye and education along the lines of sight conservation is the keynote of the prevention of eye diseases.

In the ensuing chapters I shall present the diseases of the eyes as they affect age groups. Such a mode of presentation will give a perspective of the journey through life, a sense of the span of time over which the eye has to serve. It establishes a community of interest that might apply to any one. Further, certain eye diseases are more prevalent at one period of life than at another, although they frequently jump the boundary; diseases first appearing in an early period often continue into the later periods of life.

There is an interesting general truth in this connection. The troubles to which the eyes are subject in childhood and youth affect, mostly, the structures in the front part of the eye, and the eye troubles that come later in life affect the structures in the inner, back part of the eye. To that general statement, too, there are certain outstanding exceptions.

In the main, within the periods considered, the diseases will be presented as they begin with the visible front portion and proceed to the posterior pole of the eye and on to the connection of the optic nerve with the brain.

The diseases of the eyes, then, will be taken up within the more or less elastic limits of the following age groups: infancy and childhood, adolescence, adult life, and middle and advanced age.

[NOTE.—In the February issue, Dr. Cohen will discuss the eyes in infancy and childhood.]

Some Obesity "Cures" and "Treatments"

(Continued from page 54)

Berledets.—Hexamethylenamin, boric acid, cornstarch and milk sugar.

Citrophen.—Tetraiodophenolphthalein, milk sugar, talc and starch.

Corpu-lean.—Advertising suggests that this contains dinitrophenol or an allied drug.

Corpulin.—Bladderwrack, tamarind and cascara sagrada.

Dalloff's Tea.—Leaves of senna, bearberry and lavender.

Elimiton.—Iodides, phenyl salicylate, rhubarb and caffeine.

Figuroids.—Baking soda, tartaric acid, table salt, phenolphthalein and hexamethylenamin.

Formula 281.—Listed by the Federal Food and Drug Administration as a dinitrophenol product.

Germania Tea.—Mainly senna, together with cornflower, ordinary tea, elder flowers, fennel, anise, juniper and small amounts of other herbs.

Get Slim.—Sugar, tartaric acid and baking soda, colored pink.

Hall's Tablet Triturates.—Aloes, phenolphthalein and ginger.

Hollie's Reduso Wafers.—A cracker that contained a laxative drug.

Jad Salts, Condensed.—Glauber's salt, sodium phosphate, baking soda, magnesium carbonate, tartaric acid and citric acid.

Kellogg's Safe Fat Reducer.—Thyroid substance and pokeroot.

Lucile Kimball Remedy.—Pink pills containing red pepper, menthol and bitters; brown tablets containing a cathartic, and a bath powder of soap, Epsom salt and washing soda.

Kruschen Salts.—Glauber's salt, Epsom salt, table salt, potassium sulphate, potassium chloride, citric acid.

Marmola.—Thyroid substance, bladderwrack, pokeroot, cascara sagrada and phenolphthalein.

Modern Institute Triple Action System.—Epsom salt and Rochelle salt to be taken internally; a vanishing cream containing a small amount of camphor to be rubbed on the body; and bath salts containing tartaric acid, soda and potassium sulphate.

Neutroids.—Magnesium carbonate and a poisonous substance, iodol.

Newman's Obesity Pills.—Essentially a powerful cathartic.

Nox-Ben-ol.—Listed by the Federal Food and Drug Administration as a dinitrophenol product.

Oil of Korein.—Red gelatin capsules containing a few drops of oil of sassafras and mineral oil.

Parnotis.—Dried Glauber's salt and baking soda.

Phatolene Tablets.—Bladderwrack and powdered licorice root.

Phy-thy-rin.—Analysis indicated the presence of thyroid substance.

Phytoline.—Alleged by the manufacturer to contain the active principle of pokeroot berries.

Prescription No. 17.—Listed by the Federal Food and Drug Administration as a dinitrophenol product.

Redusols.—Advertising suggests the presence of dinitrophenol or some allied substance.

Rengo.—Thyroid substance, pokeroot and cascara.

San-Gri-Na.—Thyroid substance, pokeroot and a laxative.

Sleepy Salts.—Glauber's salt, Epsom salt and a small amount of table salt.

Slim.—Listed by the Federal Food and Drug Administration as a dinitrophenol product.

Sylphine.—Chiefly borax and talc.

Vannay.—Essentially a purgative.

A. Gordon Wallace Treatment.—Bladderwrack and licorice root.

Mme. Yale's Fertilizer Tablets.—Charcoal, cream of tartar and sugar.

TUNA FISH

Courtesy General Electric Company

TUNA A LA KING, A DISH WORTHY OF ITS NAME, PROVIDES A GUSTATORY TREAT.

By E. M. GERAGHTY

"TELL ME about tuna fish," Helen said. "John just loves it. I'd like to have it oftener, but I don't know any way to fix it except plain and in salad. What else can you do with it? And may the children have it, too? Does it have any minerals or vitamins or things like that in it? And why doesn't it always look the same? Sometimes I get a can that's white as chicken, and then again I get some that's almost pink. Do tell me about it."

I was glad to tell her what I knew about tuna fish and to give her some of my recipes. I started by answering her last question first. The reason tuna fish looks white one time and darker another is because the same kind is not always purchased. There are four species of tuna used for canning.

When buying tuna fish one should decide which of the four species is preferred, find which brands supply the desired species and then buy by brand name. The housewife who always does this will never be disappointed, and she will never find that her tuna varies from purchase to purchase.

The species formerly in greatest demand was the albacore; this is the "white meat" tuna. From the beginning of September to the middle of October, it was found in the Pacific Ocean from Puget Sound south to the tropics and westward almost to Hawaii, in the Mediterranean Sea and in Japanese waters. The amount of albacore commercially packed by United States canneries has diminished so rapidly during the last few years that it is now difficult to buy white meat tuna caught off our own western coast, and the housewife finds many excellent brands of delicately flavored yellow finned tuna from which to choose.

The yellow finned tuna is a heavy bodied fish ranging in weight from 10 to 250 pounds; the average fish weighs from 40 to 80 pounds. The smaller sized yellow finned tuna is the most desirable for packing, and this species as a whole is given a high rank and has a greater

Tuna Loaf

To 1 can of flaked tuna, add 2 teaspoonfuls of lemon juice, a few drops of tabasco sauce, salt to taste and ⅔ cupful of stiffly beaten cream. Fold in stiffly beaten whites of two eggs and blend carefully. Pour the mixture into a buttered loaf pan, filling the pan about three-fourths full. Set this pan in a pot of hot water, having the water at the same level as the tuna mixture. Bake the loaf in a moderate oven for twenty or twenty-five minutes, and turn it out onto a hot platter. Garnish with triangles of hot buttered toast, tiny whole broiled tomatoes and dainty piles of latticed cucumbers touched lightly with a dressing of olive oil and white wine vinegar.

Tuna Club Sandwich

Separate white meat tuna into small pieces, but do not flake. Put a layer of tuna on a slice of buttered toast. Spread this thinly with mayonnaise to which capers and chopped stuffed olives have been added. Add sliced tomatoes to make one layer. Top with thin slices of crisp bacon cut in ½ inch pieces. Lay a pickle fan over the top. Garnish a plate of the sandwiches with crisp lettuce hearts, celery curls and radish roses.

Tuna Hash

Mix equal parts of finely flaked tuna and diced cold boiled potatoes. Put the mixture into a frying pan with enough fat to keep it from sticking. Season to taste with salt, pepper, Worcestershire sauce and onion juice. Brown the hash on the bottom without stirring, and then fold it over as you would an omelet. Tuna hash should be served hot.

Tuna à la King

Mix 1½ cupfuls of thick cream sauce with ½ cupful of giant peas, 1 tablespoonful of chopped stuffed olives, ¼ cupful of chopped mushrooms and ½ tablespoonful of chopped green pepper. Add 1 can of flaked tuna fish, and season to taste with salt. Add 1 tablespoonful of sherry. Pour into a casserole and top with baked biscuit dough.

distribution than any other species. Yellow finned tuna is found far off the southern California coast from the beginning of September to the middle of October; but the greatest development in packing it has been along the Mexican coast. The habitat of this fish is from Santa Barbara, Calif., to Central America and far westward; the season in these areas is practically the year around. The flesh of this variety shows a wider variation in color, texture and flavor than that of any other variety. It is usually light in color and firm in texture, closely approaching the white meat tuna in these characteristics.

The blue finned tuna, or leaping tuna, attains a weight of from 200 to 250 pounds, and even larger fish of this species are occasionally caught. The average, however, is between 40 and 80 pounds. Small amounts of this fish are caught along the Atlantic coast northward of New Jersey, but the greater amount is found along the Pacific coast among the islands between Santa Barbara and the Coronado Islands. The light meat is yellowish or tan in color and has an excellent flavor.

The striped tuna is smaller than any of the other three, averaging from about 7 to 8 pounds in weight with a range of from 3 to 20 pounds. This fish ranks next to the yellow finned tuna in the amount packed. The color, when canned, is pinker than that of any of the other varieties. Because of the small size of the fish the meat does not appear in large pieces and so is not as attractive looking as the others, but it has a fine texture and a delicious flavor.

Tuna fish are caught with hook and line or by the use of the purse seine. Boats bring the

Canapes

To 1 can of finely flaked tuna, add a little lemon juice, a bit of grated lemon rind, a bit of finely chopped celery, a few sweet pickled onions minced fine, a whiff of white pepper, one shake of paprika and enough mayonnaise to moisten the mixture. Spread it on unbuttered toast rounds or thin wheat crackers.

A hot canape may be made by adding 1 can of finely flaked tuna to 1 cupful of highly seasoned thick white sauce mixed with ½ cupful of grated cheese. Place thin slices of lemon on toasted rounds of bread. Pile the tuna mixture lightly on top of this, sprinkle generously with cheese, and fleck with paprika. Place the rounds under the broiler until the cheese melts. Serve hot with a tiny bunch of watercress well marinated in French dressing and thoroughly drained.

catch in to the cannery. Here the fish are weighed and carried by truck to the cleaning tables where they are scrubbed thoroughly, drawn and carefully rinsed. They are then put into baskets and rolled into the cookers where they remain in live steam, of from 1 to 1½ pounds pressure, for from one and one-half to three and one-half hours, depending on the size of the individual fish.

When they are taken from the cookers, the fish are run into chilling rooms and allowed to stand overnight. The next morning the heads, bones and skin are removed. The dark meat is separated from the light meat, and the latter goes to the cutting table where it is prepared for canning.

The next step is to carry the sections of tuna to the packing tables where each section is put into a can that has been run through a salting machine and into which about ⅛ ounce of salt has been put. Then the cans go on to the oiling machine where a specific amount of olive oil or other oil is added. Next the cans are sealed under vacuum and cooked under pressure. When this process is completed, the cans are removed, sprayed with cold water, labeled and cased.

The use of larger pieces of fish for packing in the better grades leaves many small pieces suitable for use in salads and sandwiches, which are usually marketed under the designation "flakes."

The children may have tuna fish as soon and as often as they would be allowed any similar fish. The minerals found in tuna fish are calcium, phosphorus and iron. Vitamins A and D are both present.

Tuna Patties

Break up the meat from 1 can of tuna. Add 1 teaspoonful of onion juice, 6 coarsely crushed soda crackers and 1 well beaten egg. Mix thoroughly and shape into flat cakes. Sauté the patties in butter until they are a tempting brown, and serve them hot, garnished with lemon slices and parsley.

Tuna Salad

Break the meat from 1 can of tuna into small pieces; add 1 cupful of tiny cucumber dice, 2 tablespoonfuls of finely chopped pimento, two diced hard cooked eggs and ½ cupful of finely cut celery. Season to taste with salt, paprika and onion juice. Mix with ½ cupful of mayonnaise. Pile lightly on lettuce leaves, and serve cold.

Hot Tuna Sandwiches

To use leftover tuna à la king, if there ever is any left over, remove the crusts from day old bread and cut the bread in slices ⅛ inch thick. Spread with a generous layer of the tuna à la king mixture. Add another slice of bread, press the sandwich together gently and cut lengthwise. Dip the sandwiches into a mixture of 1 egg beaten and mixed with ⅔ cupful of milk, roll them well in sifted bread crumbs and fry them in deep hot fat. Drain on paper, and serve at once.

Molded Tuna

To 1 can of flaked tuna, add 2 teaspoonfuls of lemon juice. Prepare 1 package of lemon flavored gelatin according to directions, and allow it to cool. Cut 1 medium sized cucumber into tiny, matchlike strips, and toss the tuna and cucumber lightly into the gelatin mixture. Pour the mixture into a mold, and chill it thoroughly. Serve the mold on lettuce with pimento mayonnaise.

Tuna Croquettes

Mix 1 cupful of flaked tuna with 1 cupful of thick cream sauce, 1 teaspoonful of onion juice, 1 teaspoonful of lemon juice, 1 tablespoonful of chopped parsley, 4 coarsely crushed soda crackers and 1 well beaten egg. Season to taste with salt and paprika. Form the mixture into balls. Dip these balls in fine crumbs, in well beaten egg and again in crumbs. Fry in deep hot fat. Drain and serve hot, accompanied with tartar sauce.

Chilled Tuna

An especially appetizing way to serve cold tuna is to chill the tuna thoroughly and place it on a platter. Garnish it with tiny stuffed tomatoes and piles of chilled cucumber curls with lettuce hearts between. A sauce made of whipped cream mayonnaise which has been colored pale green and to which capers and chopped olives have been added may be served with chilled tuna.

AMBROSE O'PSHAW, Detective

The Story This Far

AS THE result of playing "kidnaper" with Misty and Jimmy Suds, Carrots Green, Henry Merrywell and George Washington "Posey" Blossom, Ambrose O'Pshaw discovered the next problem to be solved. He must find out why Misty, who had adenoids, should forget the most important part of a game. Little black Posey had given Misty some bits of paper with letters written on each in berry juice "blood." Misty was to scatter these, and when the boys found them and put them together they would tell where Posey had gone. But Misty dreamily watched a snail and forgot about the papers. The boys searched for Posey until almost dark before the papers accidentally tumbled from Misty's pocket when he took out his handkerchief. Although the mystery of Posey's whereabouts was solved, Misty's dulness continued to puzzle the detective.

But Ambrose had solved much harder problems than this. He had discovered that too much rich food was what made Henry Merrywell lazy. He had sentenced most of the Widow Merrywell's pots and pans to the attic for twenty years, so that she could cook nothing but simple, healthful food.

He had also discovered that it was Robin Grabpenny's miserliness that had broken three of his own windows on the side of the house next to the baseball diamond. It was Mr. Grabpenny's own son, Johnny, who had accidentally broken the windows, although Johnny was the best player and had the best arm on the team. Ambrose explained that Johnny's nerves and muscles had not showed their usual control during the time when he was made to drink coffee instead of milk because coffee was cheaper.

Ambrose went fishing one day, met the boys and was invited to play kidnaper with them. It was during their uneasy search for Posey that Ambrose got too near the river bank, and it caved in with him. When he started to sneeze on the way home, he knew that he had taken cold.

CHAPTER V

"OH, OH! My head, my head!" Mr. O'Pshaw groaned, punched up his pillow and sneezed into a large white handkerchief. "That tumble into the river yesterday certainly was not good for me. Well, I'll stay in bed this morning, since there is nothing really important to do. No doubt I shall feel better after a while."

He pulled the covers snugly under his chin and closed his eyes. His soft, warm bed was comfortable, but he wished that his head and throat felt better.

"My head feels as if it were full of cotton," he complained. "I do believe I should smother if I forgot to keep my mouth open. A-chew!"

He closed his burning eyes and sank into a doze, from which he was awakened by a bumping sound.

"Eh, what's that!" he exclaimed, sitting up suddenly. He fell back on the pillow; his head swam with dizziness. The bumping came again, and this time he knew it was some one rapping at the door.

"Come in!" he called hoarsely.

He heard the door open slowly, and a voice called. "Are you there, Mr. O'Pshaw?"

"I'm sick abed," he answered. "Just come right— A-chew!—in."

There was a shuffling of feet, and Jimmy and Misty Suds came into the bedroom. They were sorry he was ill, and Jimmy hustled about and prepared a bit of breakfast for him. Misty did

"I STUDY BIRDS AND FLOWERS TOO," SAID ROSY, HANDING THE DETECTIVE TWO LARGE BOOKS.

By NELLIE G. HERRIMAN

his best to help, but it must be admitted that he was only in his brother's way most of the time.

"It was good of you to come and help me this morning," Ambrose said, eating the toast and drinking the hot milk they had prepared. "I declare, I feel better already."

"We are glad we could help," Jimmy said. "We came on an errand, but it can wait until you feel able to talk about it."

"Our mother sent us," Misty added, sniffling.

"Tell me what your errand was, and I can think about it until I am well. I feel better already; no doubt I can get up this afternoon."

"Mother is very unhappy," Jimmy explained. "She is afraid she will have to change Rosy's name."

"Who is Rosy?"

"Rosy is our little sister."

"Why—A-chew!—should your mother have to change her name?"

"Because it doesn't fit any more. It used to be just the right name for her, because she was pink and pretty as a rose, but something is wrong lately. Mother cries and says she fears she will have to change her name to Lily."

"Lilies are pretty flowers," Misty said. "They are all nice and white."

"But we don't want our sister to be a lily," Jimmy objected, shaking his head unhappily. "Girls do not look nice when they are like lilies, and they're not good fun, either."

"Of course not," Ambrose agreed.

"Will you come and see what you can do?"

"Of course I will! Tell your mother I'll be there this afternoon."

"But you are sick abed."

"I'll be able to get up this afternoon. It is a fine, sunny day, and it won't do me any harm to walk into the village and talk with your mother."

The boys trotted off, and the detective wondered what could change a rose into a lily. At noon Ambrose arose, took a warm bath, prepared a small luncheon, washed the dishes and started toward the village. His head still ached miserably, and he sneezed constantly; but the sun was warm and pleasant against his face.

"There is no reason why one should stay in bed when one has a cold," Ambrose thought. "It is hard to breathe, but it cannot do any harm to walk slowly in the sunshine. I'm not at all tired."

He found Mrs. Suds bending over her tubs on the back porch of her little home, and a long line of snowy clothes fluttered across the yard. Mrs. Suds was exceedingly proud of her work; it is said that no other line in the village could boast such clean, fragrant clothes as hers.

Mrs. Suds was a plump, red cheeked person, with a dimple that came at one corner of her mouth when she smiled. Her black hair was neatly brushed back from her face, and her pink gingham dress was crisp and fresh. Her sleeves were rolled up on her strong arms, and her hands were covered with soap bubbles.

"The boys said you wished to see me," Ambrose said, standing on the step.

"Yes, but they were not sure you would be able to come today," she said, smiling. "Your cold is improved, I hope?"

"I am still far from well," he answered, and sneezed. "However, the day is warm, and it will not harm me to be out."

Mrs. Suds wiped her hands and invited him into her neat little living room.

"I'm so worried about my little Rosy," she said. "The child isn't at all like her old self. She was such a strong, happy little girl a year ago, but now she seems to be fading."

"How sad!"

"She doesn't know I called you about her. I will call her, and you may talk to her. Perhaps you can find the cause of her trouble." She went to the door and called, "Rosy, will you come here, please? We have a visitor."

A little girl came into the room. She was thin and pale and very tired looking. She smiled politely at the visitor, and Ambrose saw that she had surely had a dimple like her mother's before she became so thin. Perhaps, thought he, the dimple had slipped away because it needed rosy cheeks and sparkling eyes for company.

"Good afternoon, Mr. O'Pshaw," Rosy said, dropping into a chair as if she could stand no longer. "I know you are Mr. O'Pshaw, for I often used to see you sitting on your porch when I went to the river fishing with my brothers."

"Do you enjoy fishing?" the detective asked.

"I used to like it very much, but now I have found other forms of amusement and like them better."

"Rosy is a talented child," Mrs. Suds said proudly. "She can sing and play; she sews well and often reads a whole book in a single afternoon."

"Those are valuable things to do," Ambrose remarked, "but I thought girls of your age liked to study birds and flowers and play games and—"

"Oh, I do like games!" she interrupted. "I have a whole drawer full of games and puzzles, and my brothers made me a special table to play them on."

"Rosy nearly always carries off the prize at parties when they have table games or contests." Mrs. Suds sounded prouder than ever.

"And I study birds and flowers too." Rosy slipped from her chair and went to a cupboard. Returning, she handed the detective two large books.

He turned the pages and found that one book was filled with pictures, clippings and articles, all about birds. The other scrap-book was filled with pictures of flowers, all neatly labeled and named. Rosy had, indeed, made a complete study of birds and flowers. She must be

AS HE CARRIED THE PURCHASES DOWN THE STREET UNDER HIS ARM, HE NOTICED THAT THE BAKER WAS JUST PUTTING SOME FRESH BUNS INTO THE WINDOW.

bright as well as polite, he thought. He almost enjoyed looking at her books, in spite of his aching head, burning eyes and the sneezes that tickled his nose every few minutes. He surely must find what was causing her to fade.

The door burst open, and Jimmy and Misty came running in. "Oh, Mr. O'Pshaw!" they panted together. "We're going to have a circus! We're going to have a circus! Will you come?"

"Well, I declare, it does sound interesting! Tell me all about it."

"I'm going to be the wild man from Borneo," Misty cried, his mouth even wider than usual in his delight.

"It's to be a barnyard circus, and all the fellows will have a part except Johnny Grabpenny; his father won't let him come. We will have wild animals, real live ones, and terrible long snakes and free lemonade and—and—"

"That sounds just like a real circus," Ambrose said.

"But what about poor Johnny? Why won't his father let him come?" Mrs. Suds asked.

"He thinks we are going to put ideas in Johnny's head, expensive ideas. There is a real circus coming to Nottingham next week and Mr. Grabpenny said we would all become so excited over our own circus that we'd be sure to want to see the big one. We promised not to say a thing about the big circus, but he refused to listen."

"Dear, dear!" sighed Mrs. Suds. "That is just too bad. How much fun Johnny misses, all because his father is afraid to spend his pennies. I don't know why the man is so stingy, indeed I don't. When he was young, he was as generous as any one. His name was Robin Penny then, and I'm sure no name could be more pleasant. But then he changed, and his name changed too."

"Maybe if Johnny coaxed and coaxed—" Misty suggested.

"Johnny won't coax; he says only babies do that!" Jimmy said. "And Johnny is no baby. You should see him throw a ball. Phew!"

"You'll come to the circus, won't you, Mr. O'Pshaw?" Misty asked.

"Of course I'll come, if I have no—A-chew!—work to do," the detective promised.

"You boys must run along now," Mrs. Suds said. "Mr. O'Pshaw and I have some important things to talk about."

The boys ran from the room. Rosy gathered up her books, bade the caller a weary "Good-day" and left the room.

"What do you think of my girl's case?" the mother asked anxiously.

Ambrose rubbed his chin, sneezed a little and wished he could think better. "I'm not ready to give my answer yet. It is quite evident that she is in need of help. I shall go home now and study her case and come again as soon as I have solved the problem."

Out in the sunshine once more, the detective went slowly down the street, thinking that it had perhaps been a mistake to come to the village today, after all, for he felt most miserable. He thought he could just do a little shopping while he was here, for he would need a few things in a day or so and by buying them now he could avoid a second trip into town. So he stopped at the grocer's and purchased a few eggs and a head of lettuce, bought a newspaper at the stand on the corner and went into the drug store for a tooth-brush. Then he remembered that he would need black thread to mend his coat, and he stepped into the dry-goods store for a moment. As he carried the purchases down the street under his arm, he noticed that the baker was just putting some fresh buns into the window. They looked so good that he paused and bought three for himself. At last he had completed his shopping, and he was glad to drag his aching body toward home and his bed. As he

trudged along, he thought how kind the people in the village had been. Everywhere he went, the merchants had sympathized with him because of his cold and had taken time to suggest remedies for it.

He still felt miserable the next morning, but he felt that he must get up, so that he would have his chores done in time to attend the barnyard circus after luncheon. Thinking the fresh air would clear his head, he carried his breakfast to the sunny porch. The robin cocked a bright eye at him.

"I'm going to see a real barnyard circus today," he told the bird. Last evening I feared that my cold would prevent my going; but it is no worse this—A-chew!—morning, and I proved yesterday that it does no harm to go out with a cold. I can rest this morning, for there is little to do except think what would turn a rose into a lily."

But he found this hard to do. Try as he would, he could not find an answer to Rosy's problem. His head felt thick and heavy, and ideas refused to come. Thinking was so great an effort that he was glad when a knock at the door interrupted him.

It was Carrots Green.

"Good morning, Mr. O'Pshaw," he said. "I came to tell you that the circus has been postponed. The whole Suds family is sick abed this morning, and so the brothers can't have the circus. It was to be in their barn, you know."

"Dear, dear, I'm sorry the Suds family is sick. What seems to be the trouble?"

"They have bad colds. Mother says that several people in town have colds. She heard about it when she did her shopping this morning."

"Oh pshaw, that is too bad. Colds are miserable things to have, as I have lately discovered."

"Mother said it was probably an epidemic," Carrots said, his eyes big and worried. "I hope it will soon be over, for we can't have our circus while people are sick. We have all our plans made, and we will let you know just as soon as we can put on the show."

"Thank you," the detective said, after a huge sneeze. "I hope that the epidemic will soon be over and that no one is seriously ill."

"Dear, dear!" he said to himself after the boy was gone. "Perhaps this cold is more serious than I thought, since it is part of an epidemic. I'll drink a bit of hot milk for my luncheon, then I'll take a hot bath and go right to bed. I've heard that is fine for colds."

He spent the afternoon in bed, drank a little more milk for his supper and then went to bed again. When he woke the next morning, he found himself entirely well.

"Oh—lee—oh—lay—lee—oh!" he sang, as he bathed and dressed. "I've discovered the remedy for colds. I'll hustle about my chores so that I can go into the village and tell the sick people the good news."

He visited the Suds family first and found Mrs. Suds moving about to care for her sick children although it was plain that she too felt most miserable. Misty was having a hard time to breathe; adenoids and a cold almost shut the air away from him altogether. Jimmy was sitting up and working a puzzle, while Rosy, looking now like a lily with a rosy nose, lay on the couch. Ambrose helped Mrs. Suds all he could, told her his remedy for colds and went on to call on the other sufferers.

His calls carried him to the home of the grocer, the druggist, the dry-goods merchant, the news seller and the baker. They appreciated his thoughtfulness in calling on them and were grateful for the good advice he carried.

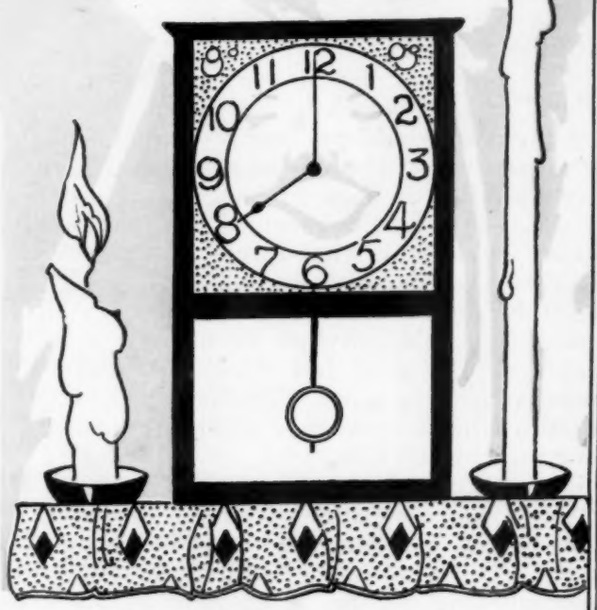
Feeling that he had been very kind, Ambrose walked along the streets of the little town, chatting with the people he happened to meet or admiring the flowers which filled the gardens with color. At the end of Pleasant Street he came to a little white cottage trimmed in green paint. It was surrounded by flowers so beautiful that he paused to admire them. He thought he had never seen a more beautiful or cozy little home. In fact, he thought he must stop long enough to compliment the owner on the results of much hard work and planning.

A white-haired lady answered his rap and smiled happily when the cheerful little man explained his errand. *(Continued on page 95)*

JIMMY WAS WORKING A PUZZLE, WHILE ROSY, LOOKING NOW LIKE A LILY WITH A ROSY NOSE, LAY ON THE COUCH.

The Fable Of The Old Clock

By Marguerite Gode



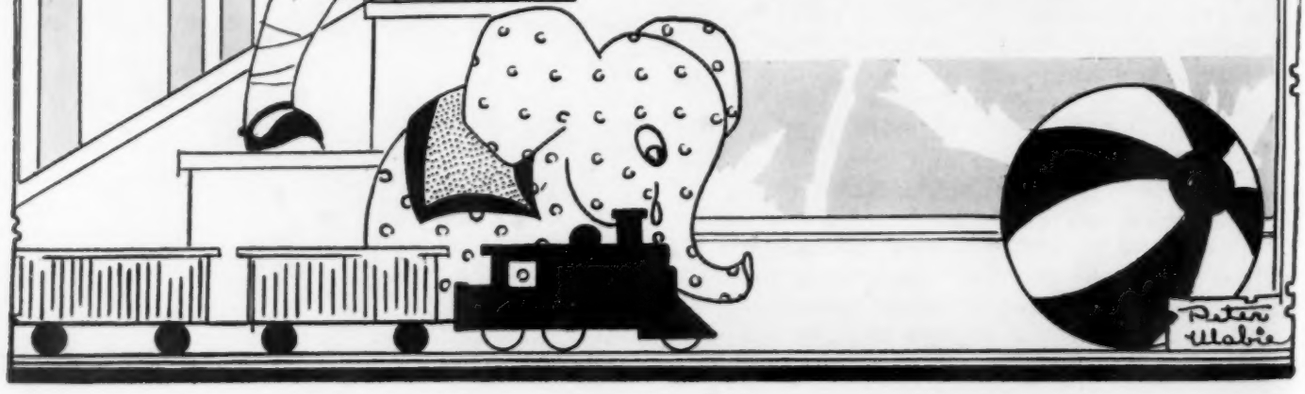
The old clock pointed its small black hand
And tickily tockily said,
"O me, O my, it is eight o'clock
And time you were all abed."
And the little folks crying loud, ascended
The stairs—and another day was ended.

The old clock pointed its long black hand
And tickily tockily cried,
"What—six o'clock!" Then he tinkled a bell
Which he carried deep down inside,
And the big folks grumbled and groaned
and ran
To work—and another day began.

The old clock folded its two black hands
And tickily tockily wept.
"No one appreciates," said he,
"The order I have kept."
So he stopped dead still as he whispered "two."
'Twas a clever thing for the clock to do.

And the grown-up folks were late to work,
And the children cried for sleep,
And they longed for the hours of six and eight
Which the old clock used to keep.
Then they wound him up, and the good old clock
Faithfully answered, "Tick tock, tick tock."

Now the old clock points its two black hands
To the hours of six and eight,
And the children dance away to bed,
And no one is ever late,
For, would you believe it, they gladly do
Whatever the old clock tells them to.



SCHOOL AND HEALTH

A Department Conducted by J. MACE ANDRESS, Ph.D.

67 Clyde Street, Newtonville, Mass.

The Classroom Teacher at Work

I. THE DOMINANT INFLUENCE OF THE TEACHER

IN SCHOOL hygiene and health education the influence of the teacher easily comes first. The school physician, school nurse, school dentist, visiting teacher and other members of the school staff play an important part; their aid is indispensable, but they see the pupils only at intervals. The classroom teacher has the closest and the most continuous contact with boys and girls at school. With the possible exception of their parents, nobody has a better chance to observe and understand them.

If she is efficient in her teaching, the classroom teacher will make it possible for the school physician and the other members of the school staff to get better results. Because of her more intimate contact with children, she may give them suggestions as to how they may cooperate with her in a better way. She should possess information from her observations of the school as to the mental and physical condition of each pupil. Because of her personal acquaintance and friendship with her pupils, she is in a strategic situation to guide them in the formation of health habits and wholesome attitudes. In one-teacher schools and in schools where there is no health service the influence of the teacher is even more important.

If the teacher is to make health fashionable among her pupils, it is no exaggeration to say that she must exemplify good health herself. The anemic, stoop shouldered, sour dispositioned teacher standing before her class cannot be expected to popularize good health. Her life is antagonistic to the very principles that she is trying to inculcate. The teacher whose personality expresses abounding physical health, good cheer and courage helps to make healthful living really contagious.

Children are influenced not only by the physical health of the teacher but also by the way she meets her problems. Is she still in an infantile stage of emotional development? Is she constantly showing her superiority over her pupils and helping to give them a sense of inferiority, or does she impart to each of them the joy of mastery and good fellowship in working with them? Does she ever acknowledge frankly that she is in the wrong, or does she try to cover up her mistakes by blaming her pupils or circumstances? Is she nervous, cross and irritable, or does she seem to have calmness, honesty and firmness in meeting trying situations in the schoolroom? These things are of fundamental worth in determining the teacher's influence on her pupils.

The first essential in successful health teaching is the ability on the part of the teacher to keep mentally and physically fit.

[NOTE.—This is the first of a year's series of editorials on the work of the classroom teacher.]

Health Teaching in January

THE familiar saying that there is a time and a place for everything under the sun has special value in health teaching. In the best schools today teachers are basing their instruction and training on the specific health needs of their pupils. This year it is the purpose of this department to offer suggestions that will have special value to teachers for every month of the year.

January has its own peculiar problems. It follows after our greatest holiday season. During this time there is liable to be a general disregard for the regular routine of living. The results of overeating, eating improper foods, exposure to infection in crowds and a general neglect of health habits begin to show. This is the beginning of the winter season for colds. Absences increase.

Regardless of the point the children may have reached in their textbooks, this is an excellent time to instruct and train them on the prevention and treatment of colds. To have perfect attendance in the classroom is desirable, but it should not be at the expense of the health of individual children or the classroom as a whole. Pupils should be instructed to stay at home and go to bed if they contract severe colds. Children in the initial stages of a cold should not be allowed to stay in school. The danger from the child who is coughing and sneezing is real. Here is a chance to teach children one of the fundamental principles of good citizenship in the school. There is much to know yet about the cause and prevention of colds, but there is no doubt among the members of the medical profession that colds are readily communicable.

In northern climes, January is also the month when ponds, rivers and lakes freeze over and when snow may be expected. Accidents from winter sports are of daily occurrence. Reports of accidents appear in the daily press, and children may put clippings of these on the school bulletin board. Accidents such as breaking through the ice, drowning and getting hurt in coasting might also be discussed with reference to their prevention. The next logical step would be to consider what might be done in case of emergencies. For example, what would be the best way to rescue a person who had broken through the ice? What would you do in case of frostbite?

To Contributors: — *The editor of the School and Health Department will be pleased to receive articles dealing with the solution of concrete and practical health education problems in the school. Articles must not exceed 1,000 words in length. Stamps should accompany manuscripts to insure their return if rejected. All articles accepted will be paid for at regular rates. Address Editor of School and Health Department of* HYGEIA, *67 Clyde Street, Newtonville, Mass.*

SOLVING HEALTH EDUCATIONAL PROBLEMS

HYGIENE AND THE USE OF THE DICTIONARY

JAMES FREDERICK ROGERS, M.D.
Consultant in Hygiene and Specialist in Health Education, U. S. Office of Education, Department of the Interior
WASHINGTON, D. C.

Dr. Rogers is of great service to teachers in dealing with health problems in unusual ways. His suggestions in the following article on the use of the dictionary in health teaching should be helpful to teachers who are already giving lessons on the use of the dictionary and also to those who wish to initiate such a project.

MUCH has been said about the correlation of health with other subjects of the curriculum, but I believe no mention has been made of the possibilities of linking hygiene to the use of the dictionary and cultivating at the same time both the habit of using that important help to an education and an interest in the history of our language. It will be necessary to use the unabridged dictionary, but this is much more interesting than the dwarf variety.

Suppose the subject of study is the skin. The word "complexion" can be mentioned by the teacher in this connection and questions can be asked as to its meaning and its origin. The following suggestions may help the teacher in her direction of the hunt for the origin and general significance of this and other words which are used so glibly without a knowledge of what is, or was, back of them.

Without consulting the lexicographer, one might guess that there is some relationship between the noun "complexion" and the adjective "complex." At any rate, a high school student who has studied a highly magnified section of the skin or who is acquainted with its physiology can hardly but be impressed with the fact that the organ is anything but simple and that, in fact, it is extremely complicated. It is made up of more than one part, and each part contains layer on layer of cells, living or recently living. It has myriads of holes leading into tubules which dip down and coil about in the deeper layers; there are sense organs and blood vessels all connected with the rest of the body.

Such a complex structure must be complex in its activities. The skin is not simply a leathery covering, preventing, under ordinary circumstances, injuries from without and the spilling of precious fluids from within; it is also a complicated sense organ and heat regulator. It is subject to change in response to the needs of the body as a whole. There are complications more marvelous, for the skin may blanch or blush at the sound of a word or the sight of an object. It is evidently part and parcel of what is called the mind.

However, guesses are only guesses, and they sometimes get one into trouble wordwise. The adjective "complex" was applied to things "which are not simple" centuries before the microscope was invented and long before any one knew that the skin had many duties to perform. To be really accurate, one will need to consult the dictionary about this, as about other words.

According to Webster the word "complexion" means, or meant:

"1. The combination in a certain proportion of the qualities hot, cold, moist, dry, supposed in medieval physiology and natural philosophy to determine the nature of the body, plant, etc. Also the analogous combination of the four bodily humors.

"2. Constitution, or habit of body or of mind so determined; the temperament, habitude or natural disposition; character, nature.

"3. Color or hue of the skin, especially of the face; formerly thought of as indicating the body temperament."

It will be noted that the word complexion was applied not only to the appearance of the skin but also to the condition of the body and of the mind. Complexion did signify something complex, but it was a complexity of mixing of the four humors; as these humors might be mixed in any quantities and might also be either hot or cold, moist or dry in any degree, the complexity could be very complex indeed, and one could have, as a consequence, any sort of complexion.

The theory of humors and temperaments is an exceedingly interesting chapter in the history of hygiene, and it will be recognized at once that it is the origin of other much used words besides "complexion." Among these are "humor," "ill" and "good," and "temper," "hot," "quick" and "even."

The humors, which our forefathers attempted to modify when their facial appearance was not satisfactory, were the four fluids or juices which they considered essential features of the human body: blood, phlegm, yellow bile, or choler, and black bile, or melancholer as the ancients called it. When these were mixed in the right proportions, man was right mentally and physically, in excellent health and mentally well balanced. When one or another of these cardinal substances was in excess, he was out of health and more or less wrong, mentally and physically. If there was too much blood, he was too sanguine, another word to be investigated; if there was too much phlegm, he was phlegmatic; if there was too much yellow bile, he was bilious, irritable, cross or choleric; and if black bile was in excess, he was melancholy. The four words, signifying the four unhealthful mixtures, have stuck, and also, to some degree, their ancient meanings, for many a bilious person thinks there is something wrong with his liver and that he has too much bile of some sort. At any rate, he is aware that he is ill humored and bad tempered.

Applied to complexions, a rubicund countenance indicated too much of the sanguine humor; the pale or putty colored face, too much phlegm; the sallow skin meant too much choler, and a dusky tinge was, of course, caused by too much melancholer.

This explanation of complexions dates back some 2,000 years or more, and it was itself made more complex by the bright idea hit on by some influential mind of medieval days that each of these humors might be either too hot or too dry, too moist or too cold. The humors must be rightly tempered according to these four qualities as well as mixed in the right proportions. The setting of the humors in order, when the complexion of skin, body or mind indicated that they were out of order, was attempted by bleeding, a common performance up to the last century, and by the use of powerful drugs supposed to produce the desired results. Diet was depended on for tempering the humors, and foods were classified as hot or cold, moist or dry, in one or more degrees. Nor has this idea quite passed out of mind, for one sometimes hears it said that certain foods will dry or heat the blood.

Not only can the origin and meaning of many commonly used words be given a new significance, but it can be pointed out that our own complexions and the quality of our humor and temper still depend, to a large degree, on our body fluids, and our body fluids are made and remade constantly from the foods which we take into our stomachs. The body is a great laboratory in which each of us carries on constantly an experiment in physiology. We should experiment with foods and feeding with an eye to the best complexions which heredity and the present knowledge of nutrition will permit us to produce and as good humor and even temper as is possible under the circumstances. One can also control, to

a degree, a tendency to be too phlegmatic or choleric, to be bad tempered or ill humored; and this is certainly worth trying, but it is not so easy a matter, and the less physically healthy one is, the harder it is to manage.

In the second definition, there is a common word which may or may not have been suggested by the pupils or have attracted their notice, and to which attention may be especially directed by the teacher. It is "disposition." It would appear that it might have originated from the theory of humors; but, when specially investigated, it will be found to have had another origin. "To dispose" means "to place" or "to arrange," and under "disposition" we read:

"2. Situation, nature or constitution (of a planet or sign) in its relation to its influence. Obs."

It is quite likely that what our forefathers had in mind when they first used the word "disposition" was the influence on man's destiny of the arrangement, at the time of his birth, of the planets, "or the sign of the zodiac arising at such a moment." The Oxford English dictionary says that, as used, "disposition" is possibly of astrological origin. Since, according to the old astrologers, man's destiny was fixed by the placing of the stars at the fateful moment of his venture into the world, so his disposition is the outcome of that stellar arrangement.

The Oxford dictionary refers to the use, in connection with "disposition," of such adjectives as "mercurial," "martial," "jovial" and "saturnine," which are all words to be looked up. I am getting into deep waters and pass from astrology into mythology, which was much mixed with astrology. The word hygiene is, of course, merely a modification of the name of a goddess, who associated with, or who is associated with, Mercury, Mars, Jove and Saturn.

Another word of astrological flavor which is worth looking up, is "lunacy," which is derived from the Latin meaning "from the moon." Lunacy was, of course, supposed to have been the result of expósure to moonlight, possibly in some particular phase of the satellite or at a time of its unlucky conjunction with the other heavenly bodies. We can "thank our lucky stars" if we were not so unfortunate.

From stars to humors was a long step in the development of the science of mental and physical health. The idea that melancholia was due to black bile rather than to the influence of moonbeams came much nearer hitting the mark; for we know that by changing the body fluids, through the addition of a small amount of alcohol, we can change a normal man into a fool or even into a lunatic. At one stage he may be wonderfully good humored, but he may also become bad tempered, and his disposition, no matter what the reading of his horoscope, may be made worse rather than bette-.

No matter under what stars we were born, or in what signs of the zodiac, we all tend to become ill tempered or bad humored when badly fed or much fatigued. No matter what the cause, we become more or less of a nuisance to others. It is our business to compensate by self control until we can restore ourselves to a state of good humor and even temper.

EVERYDAY HEALTH LESSONS IN A RURAL SCHOOL

GLADYCE FORDEN
San Luis Obispo, Calif.

Here is the story of a rural school teacher who began to investigate the causes of the conditions revealed by the physical examination of her pupils. The investigations led to measures for correction.

SUNNY SIDE is a one room rural school in San Luis Obispo County, Calif. At this school three years ago, the teacher faced a roomful of forty children in all grades, of all ages and of various nationalities. Of these, thirty were children of Japanese vegetable farmers; four were from the homes of Portugese dairymen; three children were from Mexican camps, and only three came from American homes. From the personal appearance of most of the children it was evident that cleanliness must be stressed.

Beginning with cleanliness as a basis, the work soon advanced to citizenship and general good health. Conditions revealed on annual examination by the county health nurse were alarming. Ninety-five per cent of the total number of pupils enrolled had neglected, decayed teeth. Seventy-five per cent had enlarged or infected tonsils. Five per cent needed glasses. After a general survey of the health situation had been made, a campaign was launched to take care of as many cases as possible. The campaign included home visits, talks by the nurse and a direct presentation to the children of the need for sound bodies.

During this period it seemed advisable to examine the health habits that had led to this condition, as well as to correct the wrong already done. These were some of the things discovered: Milk was seldom used and difficult to obtain; only a few of the children had their own tooth-brushes; lighting in the schoolroom was poor, and heating was inefficient. The following corrections were made. Each day the teacher brought milk from a local creamery. In cold weather this was used in preparing hot chocolate. By the contribution of a small sum each week from each family the expenses were easily met. Tooth-brushes were obtained from the county health office and were kept at school where a daily tooth-brush drill was held. Faulty lighting was partially corrected by reversing the shades so as to roll from the bottom thereby giving more light with less glare. As the old stove was badly worn, it was replaced by a modern stove, which evenly distributed the heat.

TOOTH-BRUSHES, OBTAINED FROM THE COUNTY HEALTH OFFICE, WERE KEPT AT SCHOOL, WHERE A DAILY TOOTH-BRUSH DRILL WAS HELD.

When this had been done, the idea of improving the general environment grew. Interest in personal appearance as well as in the appearance of the school became intense. It grew to be a fascinating game to all those concerned. New, brightly colored curtains gave a note of gaiety to the classroom. Green paint made dull, old desks seem like new. Bright orange oilcloth was put on the work tables. These colors harmonized and gave warmth to the room. Attractive pictures were hung on the walls. Several reading tables, on which were arranged flowers, books and magazines, were added. Thus the classroom was greatly improved, but the idea was still growing.

On the school grounds there was a well built, attractive cottage which was not being used by the present teacher. This cottage was transformed into a part of the regular school equipment. Two rooms made excellent lunchrooms. With the cooperation of the board of trustees, tables and benches of suitable size were built and painted a bright blue. The girls made colorful curtains and these, with appropriate pictures, decorated the lunchrooms. The old stove was moved into the cottage kitchen, and cooking equipment was donated by interested parents. The lunch boxes were kept on the back porch in assigned places. The tooth-brushes, with the owners' names on them, hung on rows of hooks. When a bed was donated, the screened porch was converted into a real bedroom. A few rugs, pillows and blankets were added. All children who did not show a consistent gain in weight had a daily rest period as well as cod liver oil. Children who became ill at school found the bedroom a desirable place in which to rest. Each day the children passed inspection for clean finger nails and tidy hair, after which they brushed their teeth. This took but a few minutes and was entirely supervised by the older children.

The end of the first term finished the initial campaign. With the guidance of the health nurse and whole-hearted cooperation from the parents and the health clinic of the parent-teachers association, creditable results were obtained. A greater part of the dental work had been done. Tonsillectomies had been performed in all recommended cases. Four children were fitted with glasses. Only three children were still underweight. Better school work had been accomplished through better health, and the children learned many valuable things through this project on health. Although it took many months to attain these aims, it was decidedly worth while, for surely good health is the best way to happiness.

HOW SHALL WE TEACH SAFETY TO CHILDREN?

HERBERT J. STACK, PH.D.
TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Is the learning of rules and codes about safety effective in teaching safety to children? Dr. Stack thinks that this is usually a defective method. He suggests exercises in safe practice, dramatization, visual lessons, story lessons and various other projects.

"WHAT methods shall we use in teaching safety?" a teacher writes me. "We have been giving safety lessons to our children for many years; but with all our teaching we still find the children doing dangerous things such as hitching rides, playing on the streets, running across the streets from behind parked cars, and performing similar dangerous acts."

"How can we account for dangerous practices in which we see children engaging every day when we know that our school safety program has emphasized the dangers of these practices?" a principal asks me. "Are we getting anywhere in the child safety movement?"

These are good questions from intelligent educators who for many years have been leaders in the child safety movement in their communities. Such questions deserve thoughtful consideration, for in the minds of many teachers similar ones have arisen. It is time to make some appraisal of methods in safety education and at the same time to suggest some technics that have been found effective.

I have a strong feeling that one of the greatest weaknesses in safety education is in the methods that are being used in the classroom. There are still many teachers who think that they can teach safety by giving children rules to learn and pledges and codes to memorize. There are others who depend on purely negative suggestions and exhortations such as "Don't play in the street"; "Don't play around fires"; "I don't want to see any of you children roller skating on the highway"; "Don't play with a gun"; "Don't do this," and "Don't do that." A principal who is a friend of mine specializes in the slogan method. He has a new slogan prepared in advance for each week. The children use the slogan as a writing, spelling and memory lesson. This is a quick, painless and convenient method, but how much value does this method have in actually changing the habits and attitudes of children?

Many such methods when used in schools are comparatively ineffective with children. Rules and codes, unless they are made up by the children, following a study of the situations involved, have comparatively little value. Children are conditioned against negatives; and unless such instructions are followed up by positive suggestions, they have comparatively little value.

WHEN TEACHING SAFETY

USE

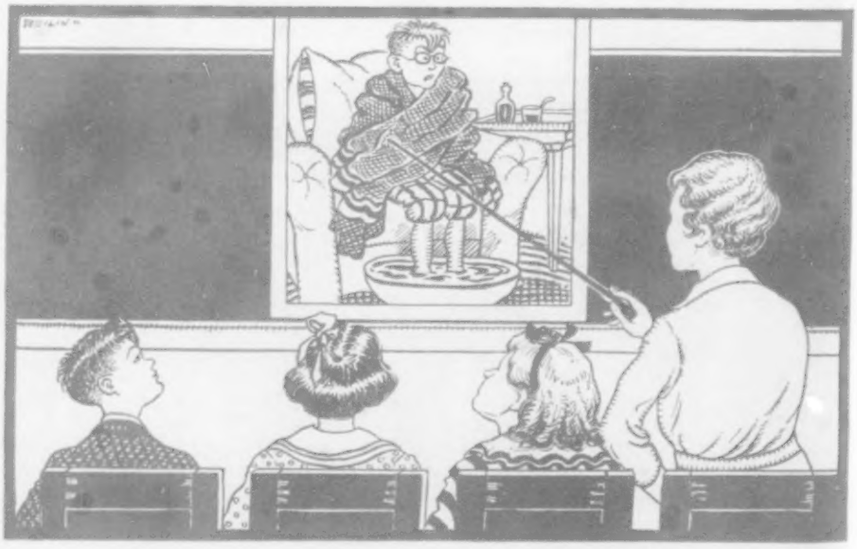
- PRACTICE LESSONS
- DEMONSTRATIONS
- DRAMATIZED LESSONS
- VISUAL LESSONS
- STORIES
- PROJECTS
- POSITIVE LESSONS

DON'T DEPEND ON

- NEGATIVE LESSONS
- THREATS OR FEARS
- SLOGANS
- SAFETY RULES AND CODES
- JINGLES
- GENERAL EXHORTATIONS

What types of lessons can be recommended as being most effective?

A safety lesson that can be taught through a practice lesson should be especially effective. Some elementary school teachers take their children to a street crossing and show



them how to cross in the right way. Others mark out a crossing on the surface of the gymnasium or playground and give practice lessons. Most good teachers of manual training depend on practice exercises to demonstrate the safe use of hand tools. However, not all subjects in safety education lend themselves to this method.

The practice exercise involves having the children perform some activity in a safe way; in the demonstration lesson the teacher or a group of the children show how it should be done or portray the hazard of wrong action. The latter method owes much of its effectiveness to the fact that through demonstrations and dramatizations, children are given mild experiences with various hazards of everyday life. Here are some examples of lessons adapted to seasonal hazards of the school year:

September.—The dangers of roller skating in the street.

October.—How to use a fire extinguisher. How to call the fire department.

November.—Some dangers in the home.

December.—How to rescue some one who has fallen through the ice.

January.—Safe places to coast.

February.—Safety in the use of tools in the school shop or in the household arts class.

March.—How fires are caused in the home.

April.—The dangers of playing in the streets.

May.—The best ways to learn to swim.

June.—Vacation safety. Group demonstrations.

These are a few examples of demonstration lessons that can be taught. Many of these may be dramatized by having children write playlets or use some of the playlets which appear monthly in *Safety Education,* a magazine published by the education division of the National Safety Council. Puppet shows may be utilized effectively.

Visual lessons also tend to be effective with children. They include the use of motion pictures, lantern slides, posters and object lessons of various kinds. Unfortunately only a few good motion pictures suited to use in the elementary schools are available at the present time, but several new films are in preparation. Lantern slides made up from pictures of common hazards of the local community and accompanied by stories are found to be useful. It is desirable to have such slides used in the classroom rather than in the assembly hall and to have the stories about the slides told by the children rather than by the teacher.

When in doubt, use a story! Safety stories told by the teacher or by the children sometimes do more to change attitudes toward safety than any other method. Stories of common experiences of everyday life, of heroism and life saving and of animals who believed in safety may all have real value in influencing children.

The use of safety projects is also one of the better methods of teaching safety. Here are some typical projects: how our city controls its traffic; safety in winter sports; how our fire department fights fires; hazards of our neighborhood, and safety in the playground.

All the methods that have been described are useful in teaching safety. Likewise they have an application in other subjects in health education if the teacher is interested in influencing the habits and attitudes of children. If teachers utilize these technics regularly in the classroom, they will find that their lessons will be more effective.

NEW HEALTH BOOKS
for teachers and pupils

THE TRANSITIONAL PUBLIC SCHOOL

By Cyrus D. Mead and Fred W. Orth. Price, $2.25. Pp. 371. New York: The Macmillan Company, 1934.

THE OLD-TIME school was distinctly a subject-centered school. A definite lesson of so many pages was assigned to be learned. When the pupils came to class, they recited on what they had studied. Frequently this meant committing the lesson to memory. The pupil who could best reproduce the words of the textbook in the language of the author was rated highest in the class. This philosophy was and still is existent to a large extent in the public school system.

However, in the numerous experimental schools and in many public schools a new conception of educational philosophy and a new kind of methodology and practice have appeared. It might be called the child-centered activity. Instead of children learning various subjects such as history, geography, science and health, they are introduced to pupil enterprises. They may make an Esquimo village. In doing this they will make use of all the information they can get. Such an enterprise or unit of work will involve learning geography, health, science and other subjects. The marked tendency in school practice today is to organize all the work of the school around such educational centers.

Which of these philosophies is correct? A professor of education and a principal of a public school collaborate in writing a book in

answer to this question. They set forth the claims and theories of each and refer constantly to actual schoolroom experience. Their conclusion is that the claims and theories of each may be reconciled without either supplanting the other. They contend that "the work of the public schools cannot only *be* experience, but *be* books (subjects), as they may be *related* to experience."

This is a stimulating book which should be read by every teacher who wishes to get a better grasp of what are usually regarded as two conflicting theories.

INSTRUCTION IN THE EFFECTS OF ALCOHOL AND TOBACCO

By James Frederick Rogers, M.D. Leaflet No. 38. Washington, D. C.: U. S. Government Printing Office.

THE RENEWED interest in school instruction concerning the effects of alcohol and tobacco has led Dr. James Frederick Rogers to write this leaflet on the subject. Dr. Rogers refers to the legal requirements in this field. With the exception of the state of Wyoming every state is required by law to teach in the public schools the effects of alcohol and tobacco. In twelve states, teachers must pass an examination on this subject. In forty states the law specifies that the effect of alcohol and other narcotics shall be taught in connection with physiology and hygiene.

The leaflet refers to the history of past instruction in this field and refers to recent school material bearing on the subject. There is a bibliography on both alcohol and tobacco.

Dr. Rogers avoids giving his own opinion as to how the tobacco and alcohol problems should be handled; but between the lines it is easy to see that he believes, as every educator should, that preaching to the youth should be avoided and the presentation of accurate facts should be encouraged at every opportunity.

A DAY in the LIFE of BERTIE BEAR

A STORY IN PICTURES BY JOHN DUKES McKEE

New Books on Health

RULES FOR RECOVERY FROM TUBERCULOSIS

By Lawrason Brown, M.D. Cloth. Price, $1.75. Pp. 275. Philadelphia: Lea and Febiger, 1934.

THIS IS the sixth edition of a most useful book. From the time when the first edition was made available, it has attracted the recommendation of leaders in health education because of its authoritative character, its literary conclusions and its dependability. The new edition includes three chapters which have not previously appeared, one on surgical treatment, one on getting up after bed rest and one on returning home. In addition, there is new material about vitamins, about alcohol and tobacco, about the expenditure of energy and about the possibility of vaccinating children against tuberculosis. It should be borne in mind that this author has spent his career at Saranac Lake, almost a shrine of tuberculosis in the United States because of the work there of Dr. Trudeau. Dr. Brown reports the views of that group, but he has kept abreast of advancement elsewhere, and all the modern knowledge is reflected in his book.

MORRIS FISHBEIN, M.D.

BIRTH CONTROL: ITS USE AND MISUSE

By Dorothy Dunbar Bromley. Cloth. Price, $2.50. Pp. 304. New York: Harper & Brothers, 1934.

THIS BOOK is planned particularly to summarize for the average reader modern scientific data on birth control and allied problems. After stating the nature of the problem, the author discusses the spacing of children and prevention of conception by abstinence and by the use of the so-called "safe period." The author does not consider the evidence sufficient to establish the usefulness of this method. She then discusses other methods which do not involve the use of apparatus, also popular fallacies and dangerous drugs and devices as well as other advertised methods. As might be anticipated from her connection with the American Birth Control League, she leads eventually to approval of the apparatus and methods which that group has promoted. Following this discussion, consideration is given to the questions of abortion and of sterilization and the relationship of the medical profession to this problem. The book is supplemented by a bibliography and by an analysis of state laws on the subject.

M. F.

WHY WE DON'T LIKE PEOPLE

By Donald A. Laird. Price, $2.50. Pp. 200. New York City: A. L. Glaser & Co., Inc., 1934.

AS A psychologist, the author belongs to the group of Pitkin and Wiggam who are popularizing psychologic material for the average reader. Some of this material was printed in the Sunday supplements to the newspapers, and much of it is of the type that is designed particularly for executives who do not know why they are executives or how to be executives. It is in some parts reminiscent of those advertisements which begin, "They laughed when the waiter spoke to

me in French." If our world were made of people who spent a good deal of time trying to avoid hurting others and trying to curry favor, what a sad world it really would be. The book is full of anecdotes taken from commercial life and allegedly from social life as well; and yet even rightly applied to the wrong people, these suggestions might work disaster. According to the author, laziness and untidiness are the cardinal sins, and the secondary sins include showing off, feelings of superiority, reprimanding those who displease, exaggerating, sarcasm and domineering. In addition one must not tell jokes at the expense of those listening, one should smile pleasantly, not talk too much, not spread gossip, not ask too many questions, not borrow, not be a political radical and not laugh loudly. I happen to know a man with a wide circle of friends and admirers who is possessed of a great number of these faults, but whose brilliancy is such as to overcome the dislike of his friends for these traits. This does not mean that the book is not an excellent book. It is full of interesting subjects and discussions. It contains good advice for those who want to be leaders; it tells how to overcome the inferiority complex and how to avoid being a "yes-man." It is highly amusing to those with a sense of humor; but for those who might need this kind of a book it is probably as good as any of those which are offered.

M. F.

YOUR MEALS AND YOUR MONEY

By Gove Hambidge. Cloth. Price, $1.50. Pp. 190. New York: McGraw-Hill Book Company, 1934.

THE BUREAU of Home Economics of the U. S. Department of Agriculture has been particularly interested in educating the public in how to spend money wisely for food. In these times when every penny counts, family food purchases are among the most serious because the food provision for a family is a steady drain on every income. We need food for energy, for growth, and for repair of tissue. For energy we require caloric value, for other purposes proteins, carbohydrates and fats, mineral salts and vitamins. This is a careful consideration of how the money may be best spent to get the biggest values for these purposes. The subject is so serious that the government has issued innumerable pamphlets prepared by various authors. The book by Mr. Hambidge is based on data made available in government documents and in reports. It seems to be quite reliable and is in a way a compact discussion of the whole subject of nutrition.

M. F.

[NOTE.—Books reviewed or mentioned on this page, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through HYGEIA or the American Medical Association.]

QUESTIONS AND ANSWERS

Diet for Diabetic Patients

To the Editor:—Please send information as to the proper diet in cases of diabetes.

I. H., Indiana.

Answer.—It is obviously impossible to furnish through correspondence any advice other than general advice about diet for patients with diabetes. Dietary instructions should be obtained from the patient's physician and should be scrupulously followed. In general, the intake of sugars and starches must be restricted and controlled so that a sufficient supply of proteins and fats may be obtained to keep up nutrition. The starches cannot be wholly eliminated since they are necessary for the proper utilization of the fats in the body. If insulin is taken, more liberal diet may be allowed.

A famous American authority on diabetes has made the statement that, in addition to diet, the patient requires medical supervision, exercise, brains and character. Of these, obviously, all that the doctor can furnish directly is the medical supervision, while the patient must control the diet, take the exercise, use his brains and apply his will power.

Dietary instructions should be obtained only from a doctor, and his care should be supplemented by all the information the patient can acquire concerning diabetes. A bibliography giving useful diabetic manuals and cook-books will be sent on request.

Syphilis

To the Editor:—Is arsphenamine really "a specific cure for syphilis," as stated in your exhibit? I had the impression that the disease sometimes recurs after treatment with arsphenamine, thus making further treatment necessary. A true cure would seem to exclude recurrent attacks.

W. H. G., Washington, D. C.

Answer.—Arsphenamine, or one of its modifications, has a specific curative action in syphilis. This, however, is not the same as saying that all cases of syphilis treated with arsphenamine will be cured. The cure of a disease implies a knowledge of the curative agent and its adequate application. It is the latter which is most often lacking because it requires the cooperation of the patient.

While arsphenamine has a specific value in the treatment of syphilis, curing the disease is by no means a quick and easy process. Prompt, intensive, prolonged and persistent treatment is necessary. Few cases of syphilis are cured under three years and, unfortunately, few patients persist in their treatment to an established cure.

It must always be taken into consideration that all human beings are prone to make mistakes. This includes doctors as well as other groups. Moreover, laboratory tests may sometimes be misleading. A percentage of cases of syphilis is probably regarded as cured when not actually cured.

When the common unwillingness of patients to see their treatment through is added to the inevitable errors that creep into the judgment of cure in a given case, there is an explanation for the reason why apparently cured cases of syphilis sometimes do recur. The answer is that they have not really been cured.

It is also worth noting that after a cure, reinfection may be possible.

Insertion of Tubes into Nose After Septum Operation

To the Editor:—Recently I read an article in which it was mentioned that tubes are inserted into the nose after a septum operation allowing the patient to breathe easily through the nose instead of through the mouth. Is this possible?

E. L., Illinois.

Answer.—A number of tubular contrivances have been devised from time to time to be used in the nose after septum operations. There are at present about a dozen such tubes on the market and available to the doctor. They are made oval in design so that they may be adapted as closely as possible to the shape of the interior of the nose. However, it has been generally found that none of these instruments are exactly adapted to the particular nose, and most rhinologists find that light packing of the nose following a septum operation is preferable to the insertion of a tube.

Tumor of the Brain

To the Editor:—Information is desired on symptoms of tumor of the brain. Is there a connection between a nervous breakdown and a tumor of the brain?

A. L. D., Illinois.

Answer.—It is not possible to outline in a brief form the symptoms of tumor of the brain. Tumors of the brain differ in their symptoms, depending on what part of the brain is affected. In some areas of the brain, a tumor can make considerable headway before any symptoms are manifested, while in other portions, a tumor will soon interfere with vital functions.

It is difficult to answer the question as to whether or not there is a connection between nervous breakdown and tumor of the brain. Since a tumor of the brain may give rise to indefinite nervous symptoms, it is conceivable that in the beginning it might be mistaken for what is generally known as a nervous breakdown. On the other hand, the term, nervous breakdown, is loosely and inaccurately used in many instances, and frequently the early symptoms of a disease such as tuberculosis are referred to as a nervous breakdown. There are also so-called nervous breakdowns which are nothing more than disturbed function that may be on a purely emotional basis, although the patient is no less ill than if there were organic disease.

Recommended books on the subject are "Outwitting Our Nerves" by Josephine A. Jackson and H. M. Salisbury, price, $2.50, The Century Co., New York City, 1932, and "Why Worry?" by G. L. Walton, price, $1.75, the J. B. Lippincott Co., Philadelphia, 1919.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Mothers stay young!

WHEN baby sleeps well, eats well and smiles, mother smiles too. And worry writes no wrinkles on her face. A baby under the physician's regular care is usually a healthy baby. What minor troubles might develop are corrected promptly—never allowed to become serious.

In guarding baby's health, just as in guarding yours, x-rays play an important part. They will show whether an enlarged thymus is creating a serious condition. They will show impending rickets. They will detect the first signs of many other disorders, so that a physician can treat them promptly and effectively.

Keep your children under your doctor's care. Go to him yourself as soon as you suspect something wrong. When he suggests the use of x-rays, remember they are one of his surest aids in making a positive diagnosis.

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Your House *and* Your Health

"Come along. You and I are going to inspect this house from top to bottom."

HOW you live is often far more important to your health than where you live. A striking example of what proper sanitation can do is shown in the Panama Canal Zone. Down there, homes have been made healthful as a result of the work done by the Sanitation Department of the United States Army. Constant vigilance keeps them so. Your home, wherever it is, requires equal vigilance.

Take an inspection trip through your house, from attic to cellar, and see whether the heating, lighting, plumbing and ventilating systems are in condition to give you and your family a full measure of health and safety. Should any of them be repaired, altered, or replaced?

If you find that your house is in apple-pie order, you will be gratified. If you find a condition which should be corrected, you will be glad to do what is necessary to make your home safer, more healthful and more comfortable.

INSPECT THOROUGHLY

Heating
Do your heating arrangements keep your home at an even temperature—about 70°? Have the flues and chimneys been cleaned recently? Is coal gas emitted from furnace or stoves?

Plumbing and Drains
It is essential to health that sewage should be properly disposed of, and that plumbing and drains be kept in repair. Is hot and cold water available for kitchen, bathroom and laundry?

Electric Wiring and Gas Outlets
Defective electric wiring or connections may cause fires. Gas leaks may cause suffocations or explosions. In case of doubt get professional advice. Repairs must be made by a qualified expert.

Ventilation and Screens
Adequate ventilation is important to health, but drafts cause discomfort and also waste fuel. Inspect the casings of doors and windows to see that they open easily and close tightly. Screens at the proper season are necessary to keep out flies and mosquitoes—disease carriers.

Food Protection
Does your refrigerator hold its temperature between 40° and 50° and keep perishable food in proper condition—especially the milk?

Leaks, Cracks or Breaks
Is there dampness in cellar or attic caused by a leak? Do clogged drain-pipes or gutters at the edge of your roof furnish breeding places for mosquitoes? Is there broken plaster in walls or ceilings in which vermin may breed? Shaky stairs? Weak banisters? Loose boards in floorings? They add to the number of falls — the most frequent of all accidents in homes.

Lighting
Correct lighting is needed to prevent eyestrain. Many a fall has been prevented by properly placed lights — particularly in halls and on stairways.

Garbage
Proper disposal of refuse and garbage is imperative.

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FREDERICK H. ECKER, PRESIDENT ~ ONE MADISON AVENUE, NEW YORK, N. Y.
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Do You Know—

1. That diseases of the heart and blood vessels are as amenable to treatment as tuberculosis? *See page 12.*
2. At what age a child should be given sex information? *See page 16.*
3. The four outstanding symptoms of eye disease? *See page 64.*
4. How to overcome worry about your children when they are out? *See page 43.*
5. The composition of the common obesity "cures"? *See page 50.*
6. Why most of the teachings of the fresh air faddists are not to be credited? *See page 22.*
7. Why members of the new generation are entitled to sympathy? *See page 30.*
8. The best way to store cheese in the home? *See page 56.*
9. Why a small enema of plain water is preferable to the use of drugs in stimulating bowel movement? *See page 38.*
10. What warning signals indicate structural faults in the body and possibly faulty body functioning? *See page 39.*
11. How to account for the row of apparently double teeth found in the skulls of early savages? *See page 26.*
12. On what basis charges were made in the mail order "patent medicine" diagnosis racket? *See page 34.*
13. Why the medical examiner system is superior to the coroner system? *See page 40.*
14. Into what three classes psychopathic musicians may be divided? *See page 46.*
15. How to combat such intestinal parasites as the roundworm? *See page 60.*
16. Some new recipes for using tuna fish? *See page 67.*

"OCCUPATIONAL DISEASES" IN CHILDREN

(Continued from page 38)

It is important that there should be sufficient time between feedings to allow for proper stomach digestion, for the complete emptying of the stomach and then, most important of all, for adequate rest for the stomach. We must economize in the work that we ask of our digestions as well as in other things. Obviously, the meaning of all this is that eating between meals is uneconomical and bad for us.

It would all be different if man lived today as the savages and animals live, starting to hunt for food only when hunger urges him on, sometimes not finding it at once, then eating as much as is wanted and resting until hunger again appears. This cannot be done in the present state of civilization.

Today, therefore, the child who does not want food usually has some good reason for his attitude. He has had too much food or has taken food too recently, or perhaps he is not well or, more frequently, he has acquired bad habits about taking his food. He should never be urged or forced. To miss a meal may be the very thing that he needs most. Poor appetite usually means that he either does not need food or cannot use it. We cannot make good appetites by forcing ourselves or our children to eat. We can only allow the appetite to appear after going without food long enough to make it really needed. When it is needed, it will be properly digested.

We are often inclined to place too much importance on the matter of weight. A fat child is not always a healthy child. Infants and children of normal weight, or even slightly below normal weight, who are active and vigorous and ready for meals, are better able to resist disease than those who are much above normal weight. Advertisements of infant foods stress the weight of children too much. Quality of flesh is more important than quantity. A strong muscle will carry a child further than a plump body.

It is a grave mistake to urge children to take food, no matter what their reasons for not wanting it. Next to the mistake of urging comes that of bribing them to eat or allowing them to choose the things they like best. Mealtime should mean an opportunity for the child to fill an empty space with useful, nourishing food. Certain preferences must, of course, be allowed, but these preferences should not include too many articles of diet. Nor is it necessary to become too greatly concerned about what the child likes and dislikes. When he is

Would You Prefer

to have your child work *like this*

Humped over — vital organs cramped—physical development retarded—eyes strained—physical weariness, mental sluggishness.

Note correct posture made easy, natural, comfortable. Note self-adapting back rail in chair, which supports lumbar section, automatically adjusting to every movement of the body.

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DO YOU CARE whether or not the seat your child occupies in the classroom contributes to his comfort and healthful development?

DO YOU KNOW the influence of posture on the health and vision of your child?

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Tells about preparing for motherhood; selecting baby's layette, etc. Contains 500 suggested names for boys and girls. Address Dept. H-1.

"OCCUPATIONAL DISEASES" IN CHILDREN

hungry enough to need food, he will take what is good for him as gladly as what tastes best.

Much labor and worry may be saved if children are impressed with the fact that what they do not eat cannot hurt them and that they do not disturb their elders by leaving the food untouched if they choose to do so.

Perhaps the most common trouble connected with digestion today is constipation. This condition needs rarely to be treated by drugs. It can almost always be met by simple dietary procedures. Regularity again is important. After a night's rest, the stomach and upper intestine are empty. The lower intestine is full and ready to get rid of its contents. The first meal taken starts the churning process along the whole digestive tract. This is the time, then, for regular bowel movement. Sometimes because of bad habits or hurry, even this regularity is not successful. When that is the case, a small cool enema of plain water will provide all the extra stimulation that is necessary. Even if this is not successful at first, it is bound to be so if continued. Such a procedure is preferable to the use of drugs, which interfere with nourishment and tend to create habits. It is unwise to do something for the body that the body ought to do for itself.

This matter of taking food and digesting it is of importance in many ways. Poor appetite, poor digestion and constipation will frequently be found at the bottom of many chronic illnesses. These conditions certainly heighten the susceptibility to colds. They undoubtedly tend to disturb sleep, and they lower resistance in general. These troubles may easily be avoided, or they may even be cured after they have started, without the detrimental effects of too much medicine.

STRUCTURAL POINT OF VIEW

(Continued from page 39)

"But you do, don't you?"

"Well, not every night exactly," said Betsy's mother, weakening. "Only about three or four times a week really."

"That's just three or four times a week too often for a child who is eating and doing the proper things," I said firmly.

"Now look here," interrupted Bobby's mother just a bit truculently, "you certainly wouldn't have me running to the doctor with Bobby because he walks on the bias with one shoulder just a little bit higher than the other, would you? I know the doctor would think I was a silly, fussy mother. I never take Bobby to see him unless there is something really the matter with him, something that I can't attend to myself. I don't believe in it. I'll wager that many of the neurasthenics of later life are started just this way; I'd rather have him have a high shoulder all his life than have him always fussing about his health!"

"So would I, if a high shoulder didn't often result in the other things that go with a crooked spine," I emphasized.

"What do you mean?"

"I mean that in the beginning, a high shoulder, as you call it, is a warning signal that the spine is not straight; and a crooked spine may or may not become unsightly."

"Not really?" they all ejaculated.

"Yes, really!" I answered.

"But isn't it quite possible that these things will be outgrown?" asked my hostess.

"Maybe they will be, and maybe they won't be. As a twig is bent, so it grows. It seems to me that it's taking an unnecessary chance to bet that way. Now shan't we have one more rubber?" I suggested, feeling that I had probably injected too serious a note into what had started out to be a merry evening of bridge.

"No, not yet! Not till you have told us just what to do in so many words. I'm really interested and perhaps a little ashamed. At any rate, I want something concrete," said my hostess.

"All right. Here are a few brief and final suggestions that may help. Don't neglect early warning signals. Here are a few structural faults that should be looked into: feet that turn out and bulge over on the inner side; legs that bow out and knees that touch when the child is standing; backs that round over at the top and hollow forward in the middle; stomachs that protrude and chests that are back of these tummies; humps on the back of the neck and heads poked forward; shoulders that drop forward or are uneven, and spines that do not form a straight line down the middle of the back. These structural faults are related to faulty body functioning.

"Don't take it for granted that your child will outgrow faulty habits of standing, sitting and walking. Don't nag him or make fun of the things that are obviously not the child's fault. Do the constructive, not the destructive, thing. This means find out the cause, then work to remove it. Your doctor should be your guide."

(To be continued)

WHY CONDITION THE AIR?

(Continued from page 42)

and three hours later the babies were taken out singly, placed on a warm blanket, gently rubbed with warm olive oil, and then returned to the common basket." Later, he obtained a laundry basket and a few hot water bottles, which made it easier to keep up the temperature. Thus the air was conditioned in this manner until the third day, when an incubator arrived from Chicago to provide for the three smallest babies. Later, other incubators were made available until finally there was one for each infant. In them the temperature was kept between 87 and 90 F. at first; but as time went on, it was gradually lowered and maintained at 84 F. Humidity was provided by sponges soaked in hot water and placed in the incubators. Dr. Dafoe says, "As the humidity of incubators is so important, I was able to procure humidity recording instruments, which were hooked on the inside of each incubator." Thus the lives of these five infants were saved at the time when they hung by a delicate thread.

The outside air practically always contains some contamination. This varies from a small amount to that which is sufficient for a definite obstruction of the sun's rays. One often thinks of the air in the country as being clean and pure; yet there is practically no place on the earth's surface where the air is entirely free from particles of dust, and at some seasons it is literally loaded with pollen. During the spring of 1934, an extreme condition existed when the dust from the arid Dakotas, Montana, Kansas and Nebraska became so dense in the air that at approximately midday it was necessary to use lights on automobiles. Even though windows and doors of buildings where people live and work were tightly closed, there was enough leakage around them so that huge quantities of dust entered. This dust was carried by the winds over the eastern states, and some of it extended out over the Atlantic ocean. Thus the inhabitants of a large area were compelled to inhale much foreign material. While this was an unusual condition, dust storms occur in some parts of the country every year. Volcanic dust has been found thousands of miles from its source. Pollens are often carried hundreds of miles in the winds.

Dust interferes materially with certain work, such as that of the painter whether he is working on the exterior of a building or applying a fine finish to automobiles or furniture. During the dust storms

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● SEND FOR THIS VITAL BOOK—New, valuable facts about vitamins and minerals in infant diet are revealed in this new book, "Modern Guardians of Your Baby's Health". All facts in it have been accepted by the Committee on Foods, American Medical Association. Merely send labels from 3 tins of Heinz Strained Foods (or 10 cents) to H. J. Heinz Company, Dept. H201, Pittsburgh, Pa.

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WHY CONDITION THE AIR?

of 1934, hospitals were forced to discontinue surgery, except in the most extreme emergencies. Despite the best methods available for keeping dust out of the air of operating rooms, it still offered considerable hazard to the patient.

Even on a clear day when there is little wind, as one approaches a large city in an airplane at considerable altitude one sees great clouds of dust and smoke before the buildings themselves are visible. The contamination of the air in such cities is so great that it filters much of the ultraviolet light from the sunshine. In New York City, the contamination of the air causes a loss of 50 per cent in visible light near the surface of the earth.

From June 1927 to May 1929 some actual measurements were made in the city of Cleveland. It was found that every month 119 tons of contamination from the air were deposited for each square mile in the downtown district. This material consisted of dust which had been blown into the air from playgrounds, parking lots and unpaved streets and, in fact, from any area uncovered by vegetation. It was pointed out that the handling of gravel and similar materials as well as the wrecking of buildings and the repairing and building of pavements resulted in considerable contamination of the air. Iron from grinding processes and from street car rails, material from the wear of pavements, rubber from the wear of tires and from the heels of shoes and many other contaminating materials were found in the air. The products resulting from the combustion of coal constituted a considerable part of the contamination. Attention was called to the fact that in addition to the material that could be collected there were large amounts of ammonia, chlorine, carbon monoxide, nitric acid, sulphuric acid and other substances which remained in the atmosphere, some of which have a marked corroding effect on ornamental iron and metal work and even on buildings, to say nothing of their harmful effects on the lungs of the people. It was shown that if the sulphur that reaches the air as a result of burning soft coal was oxidized, it would produce 175,000 tons of sulphuric acid in Cleveland in a single year.

While it is true that much of the contamination of the air of cities can be prevented, particularly that from combustion of coal, the fact remains that we do not have any method of completely controlling it. Therefore we are compelled to turn to proper air conditioning in buildings. It is true that the work of a good many people requires them to be in the open air for from eight to ten hours a day, but there is no longer any need for them to spend the remainder of the day in contaminated air. It is also true that a large number of people spend most of their working hours indoors, and there is no longer any reason why they should inhale contaminated air, even during their working hours. Any housewife, even though she lives in the country, will testify to the seriousness of the dust problem from the standpoint of additional work and harmfulness to furniture.

Largely because of the protective mechanism of the body, such as the vibrissae of the nose and the cilia which line the bronchial tubes, not all dusts which we inhale cause illness and disease; yet the fact remains that the inhalation of any dust throws considerable extra work on the protective mechanism and does no good. However, there are certain definitely harmful materials which contaminate the air. For example, some kinds of pollen result in hay fever, from which large numbers of persons suffer. Obviously, it will never be possible to keep the pollen from the outside air; therefore the only satisfactory solution of the hay fever problem is to provide proper conditioning of the air in the buildings where people live and work. Many hay fever sufferers in the past have sought sections of the country where pollens to which they are sensitive do not exist. Not only is this a great inconvenience but it is so expensive that many persons cannot afford this means of relief. Since it is only a matter of finding air free from this particular pollen, it is more logical, less inconvenient and now less expensive to provide air free from this pollen in the home or the office. Moreover, it is equally effective. One fortunate fact about hay fever is that many of its sufferers can tolerate a certain amount of pollen each day without symptoms. Some are free from symptoms if they spend only their sleeping hours in air from which all the pollen has been filtered. Simple devices are now available which condition the air of a single room in the home or the office as far as pollens are concerned, and through them many persons who have suffered from hay fever in the past are now able to live in comfort and continue their regular work. At present there is a movement, first, for architecture

WHY CONDITION THE AIR?

which will result in buildings with little or no leakage around the doors and windows, and second, for the provision of devices which will filter all the air entering the buildings. Such buildings and devices have already been constructed and used sufficiently long to prove that they are practical; it is now only a matter of extending their use as fast as possible. What is true of hay fever is also true of some cases of asthma which result from contamination of the air.

In addition to the contamination of the air in general, there are certain contaminating elements which are produced in some industries, and these, of course, require special air conditioning devices. A good example is lead dust found in various manufacturing plants. Special methods have been devised for reducing this to a minimum. Another example is free silica or quartz, which often contaminates the air inhaled by granite workers, and here again special devices are being manufactured which so condition the air that the workers in such industries no longer need to suffer a health hazard.

Filters against such insects as houseflies and mosquitoes have struck a great blow at such diseases as typhoid and malaria. But the human family has always been slow to take action against anything which could not be seen with the naked eye. Much of the contamination of the air cannot be seen as it enters our buildings. The hay fever sufferer usually does not visualize the pollen which causes his symptoms; but it is just as logical to provide filters which will protect us against the contamination which causes hay fever and asthma as it is to protect ourselves against the insect contaminators of the air.

Much has already been done in a remarkably short period of time to refine air conditioning. San Antonio, Tex., is able to boast of the first office building in the world with equipment for complete air conditioning. Now air conditioning devices are being installed in many new buildings. For example, the new Government Archives Building in Washington is air conditioned in order to protect records and valuable papers. Numerous restaurants and dining rooms are being equipped for conditioned air. The management of the Chicago Tribune Tower has seen the advantages of conditioned air and has provided it. Approximately 3,000 Pullman cars and standard coaches are air conditioned. So one might go on enumerating the places where air conditioning has been found of value, but it is necessary to continue to bring before the public not only the comfort but also the better health which results from it. The air conditioned house which was on display at A Century of Progress in Chicago did much in an educational way. As this education continues, we can look forward to the day when nearly all homes and buildings will contain conditioned air; and as a result, hay fever will be a rare affliction and the dust nuisance in the home will have vanished. The common cold and the complications that develop from it, including pneumonia, will be much less prevalent. As far as the air is concerned, we shall work with 100 per cent efficiency and we shall not suffer the discomforts of overheated or underheated air or of improper humidity. We shall then look back on the open window age when the fresh air faddist reigned supreme as we now look back on the age when food and drink were not conditioned and when flies swarmed about the rooms we occupied and resulted in large numbers of unnecessary deaths.

HEART DISEASE IN HIGH SCHOOL STUDENTS

Of 425 adolescents examined for heart disease in a four year survey made among high school students in Rochester, N. Y., 197 were found to have organic heart disease, 62 potential disease and 110 possible disease, according to the *Bulletin of the American Heart Association.* At the time of examination, 142 of the students were not under medical supervision. Sixty-seven were recorded as not eligible for gymnasium or competitive athletics, and 147 were eligible for gymnasium only. Vocational guidance was recommended for 176. In 1931 this was found to be 38 per cent; in 1932, 32 per cent. In 1933 the figure was 30 per cent and in 1934 it was 27 per cent; in these two years seventy-five examinations were made, which are not included in the estimates. Eighteen physicians contributed their services in making the examinations.

PHYSICAL EDUCATION CONVENTION

The national convention of the American Physical Education Association and its Eastern District Society will be held in Pittsburgh, April 24-27, 1935.

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THESE TEETH OF MINE

(Continued from page 29)

each other, with abrasive between, they produce one concave and one convex surface. So teeth, which functioned perfectly at the start, may wear to shapes which cause them to pound against each other when chewing. This pounding results in injury to the bone and gum. This results in pyorrhea, which in turn means infection.

Behold the poor savage! Crippled as far as chewing is concerned and host to an army of bacteria, he has passed his zenith and entered on his physical decline and fall. Not only did the individuals die young, but most of those tribes are now extinct. There were other factors, but the teeth played their part.

The Indians of the plains farther east were meat eaters. Doubtless they developed their own peculiar ills, but worn-out teeth were not among them. Skulls of even elderly individuals show teeth still in a good state of usefulness. They indicate a longer life of the individual and the tribe, and many of their descendants are still with us.

* * *

"But, Doctor," remarks the patient, "granting that I was wrong in thinking that all savages had good teeth, the fact remains that in spite of all our tooth brushing and care we do have more fillings than people out on the farms had even two or three generations ago. My grandfather lived to be well past 80 and never went to a dentist in his life, and he had all his teeth when he died."

I do not know how many patients have told me about their grandfathers' teeth! Dentists today do fill more cavities than dentists did a generation or two ago, but the fillings are smaller and prevent more serious conditions which used to call for crowns or the forceps.

The three great factors that enter into the longevity of teeth are diet and metabolism; care by the patient, and care by the dentist. In the case of the savage, the last two factors were heavily against him. While some tribes seem to have made a practice of chewing up sticks to make crude tooth-brushes, their personal mouth hygiene probably ranked close to zero. The attention they received from their medicine men or whoever else served as dentists was purely on the red side of the ledger and consisted of such methods of beautification as knocking out a front tooth or two, filing front teeth into pegs, or in the highest form such ministrations as those mentioned in the case of Aztecs and Mayans of high rank.

In the factor of diet some savages faired well and others badly. They were dependent on local foods, and it is now known that the amount of calcium, phosphorus and vitamins, the factors necessary for good teeth, varies greatly in foods of the same variety, depending on the mineral content of the soils in which they grow and the amount of sunshine they receive while growing.

Many savage jaws and teeth were large and well formed. Usually the number of cavities was less than the number of fillings today, but that is not the whole story. The value of a set of teeth to the owner may be summed up in two brief questions: How free is it from infection? How well can it chew? Assayed by these tests, savages had bad teeth.

Many persons today suffer from a wearing out of the teeth, but this is now a menace of middle age and beyond, not of youth. Usually it results from a combination of gritty food and the loss of several teeth or the filling of chewing surfaces with soft metals which wear away quickly or flow under stress; in either condition, increased wear falls on the natural tooth surfaces.

However, when modern man wears out dentally, science comes to his rescue. In his knowledge and facilities for mouth hygiene he certainly scores highly over the savage or his own forebears. In the matter of diet he has far greater diversity; even when he lives in sections which have long periods when the ultraviolet rays of the sun are diminished, he finds at his corner market foods from far off, sunny sections. He has at hand artificially prepared and concentrated vitamins, and calcium and phosphorus in pure chemical concentrates such as dicalcium phosphate in tablet or powder form. From all three standpoints he certainly has the edge on the tomahawk-wielder of yesteryear.

As to the grandfather who had such splendid teeth, we must remember that he was the exception, not the rule. He stands out almost as a legendary figure in the family history because of his good health, long life and wonderful teeth.

Good teeth and good health do most certainly go hand in hand. You may argue as to which is cause and which is effect. You may call it coincidence or a shining example of a beneficent circle, but it explains that occasional forebear of 90 summers and wonderful teeth.

[NOTE. — In the February issue, Dr. McLean's topic will be "The Golden Age of Prevention."]

A HOUSEWIFE LOOKS AT THE COMMITTEE ON FOODS

(Continued from page 59)

with the rules and regulations of the New York State board of health, it is manufactured from sweet cream from tuberculin tested cows. The cream is tested for milk fat, solids and acidity; it is then pasteurized, homogenized, cooled, soured with a special culture, drained in cheese vats, packed by machine in tinfoil lined boxes and kept in refrigerators. It furnishes 102 calories to the ounce and conforms to the federal definition of cream cheese. No special claims are made for it, except conformity to law and suitability for all table uses. It is delicious in flavor and fine for salads, toasted sandwiches and for the dessert course.

For variety, crackers and cheese may be served instead of some other dessert and may be accompanied with fresh fruit, preserved fruit or jelly. The soft cheeses are best for dessert purposes. A hard cheese with a snappy, distinct flavor is best used with vegetables. Grated cheese is delicious on creamed cauliflower or carrots and in a vegetable cream soup such as spinach soup. Grated Italian or American cheese is available in a can with a shaker top. To grate soft, mild Cheddar cheese, press it with a spoon through a coarse wire sieve.

Cheese seems naturally to belong with starchy foods, such as bread, crackers, macaroni, noodles, rice or potatoes. Try sprinkling cheese over halved, steaming hot baked potatoes. Cheese is also delicious with a crisp, green food, as when it is pressed into the cavities of stalks of celery. Pimento cheese, prepared from Cheddar cheese or from any soft cheese, is delicious and colorful for this purpose. Ripe olives, green olives, mustard and various seasonings are added to some of the blended cheese sandwich spreads.

Cheese should not be cooked. It may be melted in a sauce or may be added grated, after the food is removed from the fire. Mix cooked macaroni, cream sauce and grated cheese, put into a greased baking dish, cover with buttered bread crumbs and brown in a hot oven. Grated cheese on top of an *au gratin* dish or a sandwich may be browned quickly under the direct heat of a broiler. Too high temperature or too long cooking causes the fat to melt and drip out of cheese, leaving the toughened mass of protein, which is stringy and rubbery. Some of the old, well ripened cheeses melt smoothly, and the greatest difficulty is experienced with the mild American cheeses.

A cheese dish such as a soufflé or fondue is baked at a low temperature, from 300 to 350 F. Cheese is so concentrated in food value that one should balance the meal with bulky foods such as fresh green vegetables and fruits. Grated cheese is excellent in a salad of grated carrots and raisins, a salad of diced apples and celery or with drained canned peas, celery and mayonnaise. Cheese is particularly valuable for its calcium, as found in the milk from which it is made, for calcium is needed for building bones and teeth. Moreover, cheese is always ready to serve without elaborate preparation and without waste.

While the Seal of Acceptance is given only to reliable manufacturers who will use every possible care in the production and distribution of the cheese, cheese is a perishable product and it must be given the proper care in the retail store and in the home. Camembert, Roquefort and cream cheese are much more perishable than the hard cheeses. Cheese should be put in a ventilated container in the refrigerator.

Standards and grades for whole milk American cheese are definite, and there are official rules for the grading of cheese. Irrespective of its quality or score, American cheese is classified according to (1) age, or degree of flavor developed as a result of ripening, (2) character of the cheese with reference to texture and degree of firmness and (3) degree of color. The flavor may be classified as (1) fresh, (2) mild, or partly cured, and (3) aged and fully cured or ripened, showing well developed, sharp flavor. The texture may be classified as (1) close, firm, compact structure with practically no openings in the body of the cheese, (2) medium close and (3) open, with large or numerous openings. Uncolored cheese is a pale straw color or cream white. Medium colored cheese is not darker than a deep shade of dark straw. High colored cheese is a deep yellow or reddish shade.

Cheese of the various grades will be accepted by the Committee if they are manufactured in accordance with the requirements specified by the department of health of the community of manufacture and if the name, label and advertising accord with the grade or type of cheese and are truthful and correct.

[NOTE.—In the February HYGEIA, Mrs. McCray will discuss tomato juice. Lists of the accepted foods discussed each month will be sent on receipt of 6 cents in stamps.]

NEWS FOR MOTHERS!

Children protected against simple goiter are found to be superior in development

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IODINE, by protecting children from simple goiter, exerts a remarkably beneficial effect on growth.

This was demonstrated by Dr. Percy Stocks, of a famous university, who compared the heights and weights of a large number of 12-year-old youngsters who had been taking iodine regularly with those of an equal number of 12-year-olds who had not.

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(See article by Dr. W. M. Gardner in Hygeia, October 1934 issue.)

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THE MAKING AND UNMAKING OF A QUACK

(Continued from page 37)

sent C.O.D. to other countries, our returns there depended on individual selling. We insisted on having money in hand before forwarding a treatment. As those who addressed us from abroad seemed awed by the proclaimed greatness of Dr. Bill, believing him to be an outstanding American physician, we emphasized the personal attention he was supposed to give all cases. Foreigners were more deliberate in seeking health than Americans and could not be stampeded into buying. Although sales abroad were not great in volume, we sold medicines in every country in the world, except Germany where a bothersome law prohibited the importation of drug compounds unless the ingredients were published. In denying succor to German sufferers the Dr. Bill company assumed the attitude that it could not afford to disclose its marvelous scientific secrets. Our charges abroad were higher than they were in the United States, but as foreigners thought they were getting the benefit of the world's supreme medical knowledge, they offered little objection to the price. But the same old medicines in the same old quantities were sold abroad as in the United States.

Among the many odd characters to drift our way and to find employment on the medical staff was a giant Swede who had been everywhere and tried everything but who always looked up a medical company when in need of "quick money." He was a fast worker and an unconscionable charger. As he was conversant with more than twelve languages, he was a handy man to have about. He had been with us only a few days when he informed me that he had a rich aunt living in Sweden who had a propensity for taking every medicine she saw advertised and as she was likely to write to us he asked that her inquiry, should it come, be turned over to him to answer. He understood the foibles of his aunt, for we shortly heard from her, and he was delighted to get hold of her inquiry. The Swedish letter he wrote in reply must have convinced her that Dr. Bill was not only a wonderful physician but the world's greatest clairvoyant. He described to her all the aches and pains he ever had heard her mention, and he told her exactly how she felt at various hours of the day and night, giving her information he doubtless had gathered from her own recitals. He fixed on her enough diseases to suffice in two or three ordinary cases, and he advised special treatment at specially high prices. The correspondence that followed between nephew and aunt was too voluminous to be strictly professional, but such was his manifest interest in her health that she was telling him all the news and gossip of the home town. If I remember correctly, that scalawag of a nephew abstracted more than $300 from his aunt without revealing his identity before his fun stopped.

"It was a chance to get even," he explained gleefully. "She disowned me and cut me out of her will."

I have wondered many times since if that roving diagnostician traveled from one medical company to another merely for the pleasure of getting even with his rich aunt.

In mentioning what I regard as the crowning piece of impudence in my experience as a quack, I trust that no one will think I am trying to make it appear that I was clever in what I did. I am recalling the incident merely to emphasize the cunning that was expected from all diagnosticians. We received a letter from a professor in one of the oldest colleges at Cambridge. With the intimacy of one scientist speaking to a fellow, he described the ailments that distressed him. The eminent Dr. Brown-Séquard, shortly before his death, had examined this professor and provided him with a written diagnosis, which was enclosed in the letter with the comment, "perhaps you will be interested in this." At the time I never had heard of Dr. Brown-Séquard who, so I learned afterward, is esteemed by his profession as one of the great physicians of all time. But even if I had had knowledge of his preeminence, that would not have deterred me from running true to form as a quack.

Quite seriously I replied to the professor, straining to emulate his ease of diction in doing so, and shamelessly told him that I had gone over his case carefully and studied the diagnosis of Dr. Brown-Séquard with much interest. As a result of my deliberations it was my professional pleasure to confirm the diagnosis of Dr. Brown-Séquard. However, I detected in the symptoms as outlined to me the presence of a disease which evidently had escaped his notice. Turning to my work-sheet I picked out a convenient disease and added it to the diagnosis of Dr. Brown-Séquard.

In acknowledging my letter and ordering treatment the professor said he was deeply impressed by my diagnosis, which he regarded as more searching and comprehensive than that of Dr. Brown-Séquard. The professor paid us

THE MAKING AND UNMAKING OF A QUACK

$120 for medicine, the cost of which, plus forwarding charge, was exactly 78 cents.

Duggins was proud of this achievement of mine, but I was not. He added a $20 bonus to my pay check on the strength of it, and he used the incident in his sales talk to diagnosticians as an example of what could be done by "real salesmanship."

If my ancestors are to be held accountable for making a quack of me simply because they handed down a sublime faith in medicine, then they should also be credited with bequeathing to me a conscience, the possession of which I had forgotten in the enthusiasms of youth. However, I was now becoming conscious of its existence and beginning to realize that it was fighting for ascendency. My mind was ill at ease, and a loathing for quackery was growing within me.

At every turn I was reminded that I was engaged in a calling of ill repute. My family suffered under the stigma, and so did I. Old friends were less cordial than they had been in the days when I was a salesman. There was mockery in the tone of acquaintances when they addressed me as doctor. From Washington came rumblings which told of a rising and hostile public sentiment against the fraudulent C.O.D. medicals, and we tried to fool ourselves into believing that we were not of the number. I knew that Duggins contributed heavily to the maintenance of a lobby at the national capital in the hope that we might not be molested, and I had reason to believe that he gave generously to political campaign funds, not that he was interested particularly in good government but for the purpose of having friends in positions of authority. Evidently our business was insecure, and those engaged in it were not respected.

Being a quack had lost its kick and the adventure its glamor. Listlessly I turned to the pile of letters on my desk. Among them I saw one from a child, and I picked it up as a starter on the day's grind. Letters from children were not common. This one was from a boy who lived in a coal mining town in England. He told me that his father had been killed in a colliery. His mother was poor; but if he could be made well and strong, he would go to work and help support her.

Some one had told this boy that in America, where they do such wonderful things, there was a Dr. Bill who could cure boys who had paralysis and were crippled. He would never be well and strong, so

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THE MAKING AND UNMAKING OF A QUACK

their club doctor had told his mother, but the boy felt sure that Dr. Bill could help him. He wanted to play and work like the other boys of the town. These boys were good to him and often held their games near his mother's house so he could watch them; but that was not like playing with them.

This boy had been informed that it would take five pounds' worth of medicine to cure a boy who had paralysis. He did not have that much money and did not know where to get it. But he had sold his pet rabbits, receiving one pound for them, and would the kind Dr. Bill please send him a pound's worth of paralysis medicine? He was sorry he did not have more money to give.

I read this letter a second time. Something told me that it was a message intended especially for me. A bit later I put on my coat and hat and quit the Dr. Bill Medical Company, irrevocably turning my back to empiricism and decisively ending my career as a quack.

The Dr. Bill company did not stop operations because of my renunciation of quackery. Indeed, its greatest prosperity came shortly after my departure. A new building was erected, and Duggins built a mansion in the fashionable part of town; but the day soon came when an outraged public could not be denied. Faced with a postal fraud order, the company ceased to exist.

My quack experience is now only a memory; but across the years there come to me the voices of the sick, beseeching relief and praying to an inhuman fraud; and in saddened retrospect I can hear that fraud answering them with demands of tribute which are made commensurate to the anguish of those who suffer. At times these voices bear in on me so heavily that I dread the day of my judgment, for I fear hearing it said to me, "There's a C.O.D. package here for you. Are you prepared to redeem it?"

Should this situation arise, I trust I may be permitted to present the copy of a letter I wrote to a crippled boy in England, who lived with his widowed mother and who so longed to be well and strong that he sold his pet rabbits to buy paralysis medicine in America, where they do such wonderful things. The letter said:

"Dear Albert,

"I am returning the one pound note you sent to me for paralysis medicine. Your club doctor should be able to tell what is best to do in your case. Some day when doctors understand better why little boys have paralysis and how to cure them, he will do all that can be done to make you well and strong. Take the one pound note, my boy, and buy other rabbits. Play with them, and also get pleasure in watching the boys at their games. May God bless you, and may He show to the doctors of the world a way to help little boys who are crippled as you are.

"Dr. Bill."

This and a contrite spirit are about all I have to offer as atonement.

[THE END]

HEALTH RESOLUTIONS

The publicity bureau of the Indiana State Medical Association has compiled the following five health resolutions:

1. I will not eat too much nor will I exercise too little during the coming year; I will eat a variety of foods in order that my body may be adequately nourished; I will not forget the importance of eating fresh fruits and vegetables.
2. I will work hard during the working hours, and I will play hard when I play. I will seek to avoid late hours, and I will not neglect to take my annual vacation.
3. I will learn all that I can about the care and preservation of my health and will strive to apply the knowledge I gain faithfully and conscientiously.
4. I will consider the health and welfare of others and will give my moral support to those who are charged with the duty of protecting the public health.
5. I will go to my doctor for an annual or semiannual examination in order that he may help me to keep well.

Is not public health merely a matter of water supplies, ventilation, sewage, clinics, drains, street-cleaning, garbage, infectious diseases, public health nurses, flies, dirt, slums and serums? True it is that these items are all in it. But they no more constitute public health than mere paint, canvas and brushes constitute art; or mere iron ore and smelters constitute architecture; or rods, lines and nets constitute the fishing industry; or axes and wire rope constitute lumbering; or schoolhouses and textbooks constitute education. All these items are merely the tools of the arts. The tools of an art are essential to the art; but they do not constitute the art. Art is the result achieved; it is that object toward which the tools merely perform the shaping of the path.—*H. W. Hill*, M.D.

AMBROSE O'PSHAW, DETECTIVE

(Continued from page 73)

"How kind you are to tell me my garden makes the world brighter!" she exclaimed, drawing a shawl about her shoulders. "Come with me and examine my blossoms more closely. I shall gladly give you a bouquet to carry home with you."

She went down the path between the flower-beds, lifting a fine bloom here or straightening a bent stem there. She cut off many of the nicest blossoms and gave them to the detective.

"I plant my taller flowers back here," she said, leading him to the back of the garden, "so that they can be seen over the heads of the others."

"How bright the roses are, nodding their heads in the sunshine!" Ambrose cried. "And how delicate those tall, white flowers are, back under those trees."

"Oh, yes," she answered. "I love my roses and lilies. They are so lovely and fragrant, yet they are so different. Roses must have the warm sunshine, but lilies like to be tucked away under the shade."

"Is that so?" Ambrose spoke absent-mindedly. He gazed at the roses, then turned and looked at the lilies. Then he smiled.

"I must be going now," he told the woman. "I thank you for these fine flowers and for helping me to solve a most difficult problem. Good-day, and may your flowers always bloom so brightly!"

"That was an interesting young man," the lady said to herself as she watched him go down the street; "but he was rather queer, too. What did he mean about solving problems?"

"How stupid I've been!" Ambrose was thinking. "Of course what Rosy needs is sunshine. The answer was before me all the time, and I sat and thought and thought but couldn't find it. What could have been the matter with me? I'm sure I'm not always so stupid. I declare, my mind was almost as foggy as—as Misty's. I'm angry with myself, indeed I am!" In his impatience, he strode rapidly along, setting his feet down hard. "Misty with his adenoids, and I with my cold, certainly were two dull—" He stood still, and his eyes became big and round. "Why, why! Cold, dulness; adenoids, dulness! It was the adenoids that dulled poor Misty's wits! Another problem is solved! Oh—lee—oh—lay—lee—oh!" He danced a jig in the middle of the sidewalk, and a woman leaned from a window and stared at him in amazement.

She was still staring when he turned around and dashed toward the south side of the village, taking the longest possible steps. He could not hurry fast enough to give Mrs. Suds the news.

"Hereafter my Rosy shall study birds in the fields instead of in books," she said, "and she must play games on the grass instead of on the table. I shall begin today to save my pennies; for Misty's adenoids must be removed, and it will take money. I fear it will take a long time, for pennies come slowly and go quickly here. But how glorious it is to know that Misty's fog will soon be cleared away!"

"My next problem will be to find the money to have those adenoids taken out at once," Ambrose said slowly. "They are robbing the boy of the best part of his life."

He started home once more, thinking what a fine world it was, in spite of colds, adenoids, hard work, stingy people and other troubles. He was glad he had chosen to become a detective; for, as he said to himself, "How happy it makes me feel to go about solving other people's troubles!"

He was strutting a bit when he met Carrots, who was trying out a new bicycle.

"Ah, have you heard further news regarding the epidemic?" he asked.

"Mother inquired this afternoon, and she says it does not seem to be spreading."

"Well, well, that is very fine!" Ambrose was standing stiffly and proudly. "And so there are no new cases?"

"None at all." Carrots rubbed a loving hand over the handlebars of the new bicycle. "She said she never knew an epidemic to act so before. Usually epidemics affect the weaker people first, but this time those who had it had all been in excellent health. There were the Sudses, the grocer, the merchant, the news seller, the dry-goods clerk, the druggist and the baker. All were strong and well. Why did the epidemic pick out those certain people?"

"It is strange," the detective agreed. "As you say, they had all been well, for they seemed in excellent health when I talked with them yesterday. And now they are all ill, and every one else is still well. How odd! I wonder why just the people I talked with—Oh!"

"Why, Mr. O'Pshaw, what is the matter?" Carrots was staring at him. "Your face is red as anything!"

"It is burning with shame," Ambrose said unhappily.

"Why?"

"I have just learned," he choked a little, "that I was the epidemic!"

(To be concluded)

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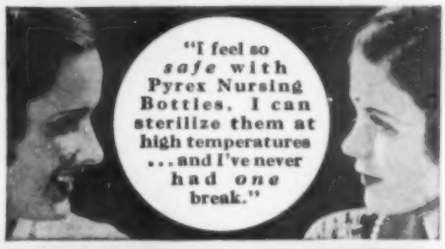

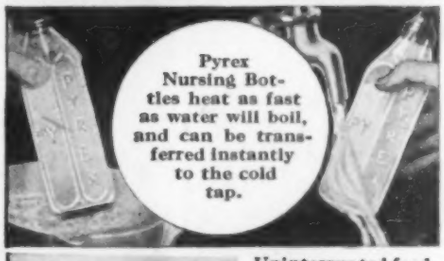

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